

August 2023

Dan Margalit

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POSITIONS

- Stevenson Professor & Chair of Mathematics, Vanderbilt U, 2023–present
- Professor, Georgia Tech, 2016–2023
- Associate Professor, Georgia Tech, 2012–2016
- Assistant Professor, Georgia Tech, 2010–2012
- Assistant Professor, Tufts U, 2008–2010
- Assistant Professor (postdoctoral position), U of Utah, 2003–2008

EDUCATION

- Ph.D. in Mathematics, U of Chicago, June 2003
Thesis Advisor: Benson Farb.
- M.S. in Mathematics, U of Chicago, March 2000
- Sc.B. in Mathematics, Brown University, May 1998
Magna Cum Laude, Phi Beta Kappa

AWARDS AND FELLOWSHIPS

Research

- Accompanying Lecture to Mary Cartwright Lecture, LMS, 2023
- Class of 1940 W. Howard Ector Outstanding Teacher Award, GaTech '23
- Maryam Mirzakhani Lecture, Joint Mathematical Meetings, 2022
- Levi L. Conant Lecture, Worcester Polytechnic Institute, 2022
- Levi L. Conant Prize, American Mathematical Society, 2021
- Fellow of the American Mathematical Society, Class of 2019
- Leddy Family Faculty Fellowship, GaTech, 2016–2018
- Simons Fellowship, 2016
- Invited address, Southeastern Section, AMS, 2015
- National Science Foundation CAREER Award, 2010
- Sloan Research Fellowship, 2009
- NSF Postdoctoral Fellowship, 2004–2007

Teaching

- Student Recognition of Excellence in Teaching, GaTech 2021
- Eichholz Faculty Teaching Award, GaTech, 2021
- Member, Alpha Eta Circle of Omicron Delta Kappa, Tapped 2021

- Student Recognition of Excellence in Teaching, GaTech, 2021
- Herman Fulmer Prize, School of Mathematics, GaTech, 2019
- Class of 1940 Course Survey Teaching Effectiveness Award, GaTech 2013
- Outstanding Instructorship Award, Utah, April 2007
- Lawrence and Josephine Graves Teaching Prize, Chicago 2002

GRANTS

- NSF Std Award, Braids, Surfaces, & Polynomials, \$395,998, 2022–25.
- NSF Grant, Topology Students Workshop, \$40,000, 2020.
- NSF Grant, Georgia Institute of Technology Mathematics REU Program, co-PI, \$380,386, 2019–2024.
- NSF Grant, Tech Topology Conference, co-PI, \$75,000, 2019–22.
- NSF RTG Awd, Georgia Tech Geometry & Topology, \$2.4M, 2018–2023.
- NSF Std Award, Mapping class groups & polynomials, \$203,000, 2018–21.
- NSF Grant, Topology Students Workshop, \$40,000, 2018.
- NSF Grant, No Boundaries Conference, \$30,000, 2017.
- NSF Standard Award, Group-theoretical, combinatorial, & dynamical aspects of mapping class groups, \$228,100, 2015–18.
- NSF CAREER Award, Group-theoretical, dynamical, and combinatorial aspects of mapping class groups, \$427,666, 2010–15.
- NSF Grant, Tech Topology Conference, \$72,664, PI, 2015–18.
- NSF Grant, Tech Topology Conference, \$54,072, Co-PI, 2012–14.
- NSF Grant, Tech Topology Conference, \$7,400, Co-PI, 2011.
- NSF Standard Award, Algebra & topology of the Johnson filtration, \$95,559, 2007–10.
- NSF Postdoctoral Fellowship, \$108,000, 2004–2007.

PAPERS (available at <http://www.math.gatech.edu/~margalit>)

Published and accepted

1. Geometry versus algebra in the mapping class group, *Ph.D. thesis*, University of Chicago, 2003.
2. A lantern lemma, *Algebraic and Geometric Topology* 2: 1179–1195, 2002.
3. Commensurations of the Johnson kernel, with Tara E. Brendle, *Geometry and Topology* 8: 1361–1384, 2004.
4. Automorphisms of the pants complex, *Duke Mathematical Journal* 121(3): 457–479, 2004.
5. Braid groups and the co-Hopfian property, with Robert W. Bell, *Journal of Algebra* 303: 275–294, 2006.
6. Abstract commensurators of braid groups, with Christopher J. Leininger, *Journal of Algebra* 299 (2): 447–455, 2006.
7. Curve complexes and finite index subgroups of mapping class groups, with Jason Behrstock, *Geometriae Dedicata* 118(1): 71–85, 2006.

8. Weil–Petersson isometries via the pants complex, with Jeffrey F. Brock, *Proceedings of the AMS* 135 (2007), 795–803.
9. A homological recipe for pseudo-Anosovs, with Steven Spallone, *Mathematical Research Letters* 14 (2007), no. 5, 853–863.
10. Injections of Artin groups, with Robert W. Bell, *Commentarii Mathematici Helvetici*, 82 (2007), 725–751.
11. Dimension of the Torelli group for $\text{Out}(F_n)$, with Mladen Bestvina and Kai-Uwe Bux, *Inventiones Mathematicae* 170 (2007), no. 1, 1–32.
12. Addendum to: Commensurations of the Johnson kernel, with Tara E. Brendle, *Geometry and Topology* 12, 97–101, 2008.
13. The lower central series and pseudo-Anosov dilatations, with Benson Farb and Christopher J. Leininger, *The American Journal of Mathematics*, 130(3): 799–827, 2008.
14. Geometric presentations for the pure braid group, with Jon McCammond, *Journal of Knot Theory and Its Ramifications* 18 (1) 1–20, 2009.
15. Dehn twists have roots, with Saul Schleimer, *Geometry and Topology* 13 (2009), 1495–1497.
16. Two-generator subgroups of the pure braid group, with Chris Leininger, *Geometriae Dedicata* 147(1): 107–113, 2010.
17. The dimension of the Torelli group, with Mladen Bestvina and Kai-Uwe Bux, *Journal of the American Mathematical Society* 23 (2010), no. 1, 61–105.
18. Small dilatation pseudo-Anosovs and 3-manifolds, with Benson Farb and Chris Leininger, *Advances in Mathematics* 228(3): 1466–1502, 2011.
19. Generating the Torelli group, with Allen Hatcher, *L’Enseignement Mathématique* 58 (2012), 165–188.
20. On the number and location of short geodesics in moduli space, with Christopher J. Leininger, *Journal of Topology* 6(1), 30–48, 2013.
21. Indecomposable surface bundles over surfaces, with Inanc Baykur, *Journal of Topology and Analysis* 5(2), 161–181, 2013.
22. Cohomology of the hyperelliptic Torelli group, with Tara E. Brendle and Leah Childers, *Israel Journal of Mathematics* 195, 613–630, 2013.
23. Point pushing, homology, and the hyperelliptic involution, with Tara Brendle, *Michigan Mathematical Journal* 62(3), 451–473, 2013.
24. Lefschetz fibrations and Torelli groups, with Inanc Baykur, *Geometriae Dedicata*, 177(1), 275–291, 2015.
25. Abstract commensurators of right-angled Artin groups and mapping class groups, with Matt Clay and Chris Leininger, *Mathematical Research Letters*, 21 (3) 461–467, 2014.
26. Generators for the hyperelliptic Torelli group and the kernel of the Burau representation at $t = -1$, with Tara Brendle and Andrew Putman, *Inventiones Mathematicae* 200 (1) 263–310, 2015.
27. Factoring in the hyperelliptic Torelli group, with Tara Brendle, *Mathematical Proceedings of the Cambridge Philosophical Society*, 159 (02), 207–217, 2015.

28. The level four subgroup of the braid group, with Tara E. Brendle, *Journal für die reine und angewandte Mathematik*, 735, 249–264, 2018.
29. Efficient geodesics and an effective algorithm for distance in the complex of curves, with Joan Birman and Bill Menasco, *Mathematische Annalen* 366(3), 1253–1279, 2016.
30. Pseudo-Anosov stretch factors and homology, with Ian Agol and Christopher Leininger, *Journal of the London Mathematical Society* 93 (3), 664–682, 2016.
31. Problems, questions, and conjectures about mapping class groups, *Breadth in contemporary topology: 2017 Georgia International Topology Conference*, Proc. Sympos. Pure Math. 102, 157–186, 2019.
32. Surface groups, infinite generating sets, and stable commutator length, with Andrew Putman, *Proceedings of the Royal Society of Edinburgh Section A: Mathematics*, to appear
33. Normal subgroups of mapping class groups and the metaconjecture of Ivanov, with Tara Brendle, *Journal of the American Mathematical Society*, 32 (4), 1009–1070, 2019.
34. The Birman–Hilden theory, with Rebecca Winarski, *Bulletin of the London Mathematical Society*, 53, no. 3, 643–659, 2021.
35. Right-angled Artin groups as normal subgroups of mapping class groups, with Matt Clay and Johanna Mangahas, *Compositio Mathematica*, 157, no. 8, 1807–1852, 2021.
36. Homomorphisms of commutator subgroups of braid groups, with Kevin Kordek, *Bulletin of the London Mathematical Society*, 54 (1) 95–111, 2022.
37. Normal generators for mapping class groups are abundant, with Justin Lanier, *Commentarii Mathematici Helvetici* 97, 1–59, 2022.
38. Representation stability in the level 4 braid group, with Kevin Kordek, *Mathematische Zeitschrift* 302, p. 433–482, 2022.
39. Recognizing topological polynomials by lifting trees, with Jim Belk, Justin Lanier, and Becca Winarski, *Duke Mathematical Journal*, to appear.
40. Automorphisms of the fine curve graph, with Adele Long, Anna Pham, Yvon Verberne, and Claudia Yao, *Transactions of the American Mathematical Society*, to appear.

Submitted

41. Homomorphisms between braid groups, with Lei Chen and Kevin Kordek.
42. Totally symmetric sets, with Noah Caplinger, *preprint*.

Books

43. A Primer on Mapping Class Groups, with Benson Farb, 472 pages, *Princeton Mathematical Series* 49, Princeton University Press, 2012.
44. Thurston's Work on Surfaces, with DJun Kim. English translation of "Travaux de Thurston sur les surfaces," edited by A. Fathi, F. Laudenbach, and V. Poénaru. *Mathematical Notes* 48, Princeton University Press, 2012.
45. Office Hours with a Geometric Group Theorist, edited with Matt Clay, 464 pages, Princeton University Press, July 2017.
46. Interactive Linear Algebra, with Joe Rabinoff, 456 pages, Jan 2018.

Articles

47. A Carnival of Calculus, *MAA FOCUS*, May 2008.
48. Review of "Thurston's Work on Surfaces," *Bull. of the AMS* 51 (1), Jan 2014.
49. The mathematics of Joan Birman, *Notices Amer. Math. Soc.* 66 (2019), no. 3, 341–353. *Recipient of the 2021 Levi L. Conant Prize, AMS.*
50. Mixing Surfaces, Algebra, & Geometry, *Notices AMS* 70 (2023), no. 5, 737–748.

CONFERENCES CO-ORGANIZED

- AMS Sectional Meeting, Atlanta, Mar 2023
- Special Session: Geometric Group Theory, AMS Sectional Meeting, Atlanta, Mar 2023.
- Special Session: Geometric Group Theory, JMM, May 2022.
- Special Session: Groups, Geometry, & Topology, Mar 2021.
- Topology Postdocs Workshop, July 2020.
- Topology Students Workshop, June 2012–2022 (even years).
- Tech Topology Conference, Dec 2011–22.
- Algorithms in Complex Dynamics and Mapping Class Groups, ICERM, November 2019.
- Special Session: Mapping Class Groups, Auburn, March 2019.
- No Boundaries: Groups in Algebra, Geometry, & Topology, Chicago, Oct 2017.
- Geometric Group Theory, Special Session at MCA, Montreal, July 2017.
- Office Hours with a Geometric Group Theorist, JMM, Jan 2017.
- Geometric group theory and topology, AMS Special Session, March 2015.
- Combinatorial Link Homology Theories, Braids, and Contact Geometry, ICERM, August 2014.
- Georgia Topology Conference, May 2014.
- Mini-course: Seven Crash Courses on Mapping Class Groups, Joint Mathematics Meetings, Baltimore, January 2014.
- Mathematics Research Communities, Geometric Group Theory, Snowbird, June 2013.

- Special Session, “An Invitation to Geometric Group Theory,” MathFest, Pittsburgh, August 2010.

ADVISING

Faculty mentoring

- Mentorship reading group, Fall 2020 and Spring 2022
- New faculty mentoring, College of Sciences, Fall 2018, Fall 2019, Fall 2022
- Promotion and Tenure mentor, Jen Hom, Spring 2022

Postdoctoral advising

- Saadet Öykü Yurttaş, Fall 2014–Spring 2015.
- Balázs Strenner, Fall 2016–Spring 2019, recipient of *Mary Ellen Rudin Prize in Topology*
- Kevin Kordek, Fall 2017–Spring 2020.
- Marissa Loving, Fall 2019–Spring 2020, recipient of *NSF Postdoctoral Fellowship*.
- Yvon Verberne, Spring 2021–present, recipient of *N SERC Postdoctoral Fellowship*.
- Ryan Dickmann, Fall 2022–present
- Abdoul Karim Sane, Fall 2022–present

Graduate advising

- Hyunshik Shin, Ph.D. Spring 2014
- Rebecca Winarski, Ph.D. Spring 2014
- Shane Scott, Ph.D. student, Ph.D. Spring 2018
- Justin Lanier, Ph.D. student, Fall 2015–Spring 2020, recipient of *NSF Postdoctoral Fellowship, Top Graduate Student in SoM, Best Thesis in SoM*.
- Sarah Davis, Ph.D. student, Fall 2017–Fall 2019
- Santana Afton, Ph.D. student, Spring 2019–Spring 2020.
- Dan Minahan, Ph.D. student, Spring 2019–present
- Roberta Shapiro, Ph.D. student, Fall 2019–present
- Laura Stordy, M.S. student, Fall 2020–Fall 2021
- Katherine Williams Booth, Ph.D. student, Spring 2021–present
- Jaden Wang, Ph.D. student, Fall 2022–present
- Jacob Guynee, Ph.D. student, Fall 2022–present
- Shuxian Song, Ph.D. student, Fall 2023–present

Undergraduate research

- Mohammad Adeel, Undergrad. Research Opportunities Program, 2007.
- Eric Platt, Undergraduate thesis, Utah, 2007.

- Tejas Shah, Independent Study, Tufts, 2009-10.
- Sarah Butchko, Ryan Dickmann, Charles Wang, Reading and research group, Summer 2016.
- Peter Woolfitt, REU, Georgia Tech, Summer 2012.
- Ryan Dickmann, Senior Project, Georgia Tech, Fall 2015.
- Santana Afton, Sarah Davis, Sam Freedman, Ian Katz, Justin Lanier, Laura Stordy, Balázs Strenner, Becca Winarski, Yandi Wu, Summer research cluster, Summer 2017.
- Libby Taylor, undergraduate research project, Fall 2017.
- Shreyas Casturi, Jonathan Chen, Vignesh Raman, Kyle Xiao, undergraduate research project, co-advised with Balázs Strenner.
- Santana Afton, Sarah Davis, Becca Winarski, Justin Lanier, Balázs Strenner, Xian Li, Ruotong Zhai, Abigail Saladin, Janet Huffman, Jacob Shulkin, Logan White, Summer 2018.
- Jessica Appel, Alice Chudnovsky, Katie Gravel, Annie Holden, Lily Li, Caleb Partin, Sidhanth Raman, Nia Walton, Ruoyi Wang, Summer 2019.
- Elyssa Cirillo, Jiamin Li, Lily Li, Adele Long, Sarah Ruth Nicholls, Caleb Partin, Anna Pham, Alica Ponte, Julia Shneidmann, Claudia Yao, Summer 2021.
- Noah Caplinger, Fall 2021–Spring 2022
- Sami Aurin, Georgia Burkhalter, Sophia Gardiner, Palani Lideros, Alyssa McPoyle, Akash Narayanan, Rachel Niebler, Darrion Thornburgh, Summer 2023

Teaching advising

- James Conway, Summer 2013
- Kelly Bickel, Fall 2013–Spring 2014
- Shane Scott, Summer 2014
- Ruidong Wang, Summer 2015
- Rohan Ghanta, Summer 2016
- George Kerchev, Summer 2016
- Padmavanthi Srinivasan, Fall 2017
- Caitlin Levenson, Spring 2017–Spring 2020
- Yoav Len, Fall 2019–Spring 2020
- Kevin Kordek, Fall 2018–Spring 2020
- Wade Bloomquist, Fall 2019–Spring 2023
- Alex Blumenthal, Fall 2020, Spring 2023
- Daniel Cruz, Fall 2020–Spring 2021
- Chris Jankowski, Spring 2020–Spring 2023
- Jonathan Simone, Fall 2022–Spring 2023
- Austin Christian, Fall 2022–Spring 2023

Other advising

- Advisor for Undergraduate Problem Solving Contest, Utah, 2004–6.
- Advisor for GaTech Roller Hockey Club, 2016–present.
- ADVANCE speed meeting session, Spring 2019.
- Panelist, Southeastern Undergraduate Mathematics Workshop, Aug 2019.
- Panelist, Postdoc Orientation in SoM, August 2018, 2019, 2020, 2021, 2022.
- Panelist, Math 6001, Fall 2016, 2017, 2018, 2019, 2020, 2021, 2022.
- Panelist, New Faculty Workshop, CoS, September 2019.
- Lecture on talks, MSRI, Fall 2020
- Lecture on talks, MSRI, Spring 2021
- Current Math Seminar, Professional development, Rice U, Fall 2022

EDITORIAL WORK

Editorial boards

- Editorial board, Algebraic & Geometric Topology, 2016–present.
- Editorial board, Advances in Mathematics, 2019–present.

Refereeing

- Referee for: Acta Mathematica Sinica, Advanced Lectures in Mathematics, Advances in Geometry, Advances in Mathematics, Algebraic and Geometric Topology, American Journal of Mathematics, American Mathematical Monthly, American Mathematical Society Book Program, Annales de l'Institut Fourier, Annales Scientifique de l'École Normale Supérieure, Annals of Mathematics Studies, Arnold Mathematical Journal, Ars Mathematica Contemporanea, Astérisque, Bulletin of the Australian Mathematical Society, Bulletin des Sciences Mathématiques, Bulletin of the London Mathematical Society, Commentarii Mathematici Helvetici, Communications Faculty of Sciences University of Ankara Series A1 Mathematics and Statistics, Communications in Analysis and Geometry, Duke Mathematical Journal, Ergodic Theory and Dynamical Systems, Experimental Mathematics, Forum of Mathematics Sigma, Fundamenta Mathematicae, Geometriae Dedicata, Geometric and Functional Analysis, Geometry and Topology, Glasgow Mathematical Journal, Groups, Geometry, and Dynamics, Indiana University Mathematics Journal, International Journal of Algebra and Computation, Inventiones Mathematicae, Israel Journal of Mathematics, Journal of Algebra, Journal of the American Mathematical Society, Journal of the Australian Mathematical Society, Journal of the European Mathematical Society, Journal of Group Theory, Journal of Knot Theory and Its Ramifications, Journal of Modern Dynamics, Journal of Pure and Applied Algebra, Journal of Topology, Journal of Topology and Analysis, Linear Algebra and Its Applications, Mathematica Scandinavica, Mathematical Proceedings of the

Cambridge Philosophical Society, Mathematics Research Letters, Mathematische Annalen, Mathematische Zeitschrift, Mediterranean Journal of Mathematics, Memoirs of the American Mathematical Society, Michigan Mathematical Journal, Moscow Mathematical Journal, Nagoya Mathematical Journal, New York Journal of Mathematics, Pacific Journal of Mathematics, Princeton University Press, Proceedings of the American Mathematical Society, Proceedings of the London Mathematical Society, Proceedings Mathematical Sciences, Proceedings of Symposia in Pure Mathematics, Publicacions Matemàtiques, Quantum Topology, Revista Matemática Iberoamericana, Rocky Mountain Journal of Mathematics, SIAM Journal on Applied Algebra and Geometry, Topology and Its Applications, Topology Proceedings, Transactions of the American Mathematical Society, Transformation Groups, Turkish Journal of Mathematics.

- Reviewer of 8 articles for MathSciNet.

Grant panels

- NSF grants panelist & NSA grant reviewer, 2009, 2013, 2014, 2016, 2020.
- University Research Fellowships reviewer, U St. Andrews 2022.
- Dutch Research Council, 2020, 2021.
- Swiss National Science Foundation, 2020.
- PSC-CUNY research grant review panel, Summer 2015.

Thesis Committees

- Biao Ma, CNRS, Spring 2021.
- Erik Lindell, Stockholm University, Spring 2021.
- Shashank Markande, School of Physics, Georgia Tech, Spring 2021.
- Tarik Aougab, Yale University, Spring 2015.
- Tyrone Ghaswala, U Waterloo, Spring 2017.
- Habilitation referee, Sebastian Hensel, University of Bonn, 2017.
- Yvon Verberne, U Toronto, Spring 2020.
- Neeraj Dhanwani, IISER Bhopal, Fall 2020.
- Apeksha Sanghi, IISER Bhopal, Summer 2022.
- SOM Oral Exam Committee, Meredith Casey, Jing Hu, James Conway, Sudipta Kolay, Anubhav Mukherjee, Surena Hozoori, Jaewoo Jung, Weizhe Shen.
- SOM Thesis Committee: Meredith Casey, Thao Vuong, Anh Tran, Jing Hu, Gokhan Elmas, James Conway, Hyunki Min, Anubhav Mukherjee.

OUTREACH

Elementary and secondary school outreach

- Academic Partner to Orr High School, 2001.
- Polk Bros./U of Chicago program for Chicago Public Schools, 2002–3.
- CNA Mathachievement program for Chicago Public Schools, 2002–3.

- SESAME program for Chicago Public Schools teachers, 2002–3.
- Math Circle program for Utah high school students, Utah, 2003–4.
- Presenter, GT Future Tech, Spring 2016.
- Family Science Night, Morningside Elementary School, 2016–20.
- EXPLORE undergraduate recruitment event, Spring 2017–19, 22.
- Coach for Paideia School Odyssey of the Mind team, 2018–20.
- Pi Day activity, The Paideia School, March 2019.
- Hosted students from Renfro Middle School, April 2019.
- Co-organizer, CEISMC STEM Teacher @ Tech Day, Spring 2020.
- Imagining the Future, Atlanta Science Festival, Homeschool Field Trip, Spring 2021.
- Imagining the Future, Atlanta Science Festival, Boyd Elementary School, Spring 2022.
- Levi L. Conant Public Lecture at WPI, Spring 2022.
- Oglethorpe University Summer Day Camp in Mathematics, Summer 2022
- Paideia Elementary School class visit, Spring 2023

Undergraduate and graduate outreach

- Co-organizer, Calculus Carnival, Utah, 2007.
- Lecture, Math 4801, Undergrad. Seminar, Fall 2010, 2012, 2013, 2016.
- Lecture, Research Horizons Seminar Fall 2010, Spring 2012, Fall 2016, Fall 2019.
- Guest lecture, GT1000, Georgia Tech, Fall 2011, Fall 2013, Fall 2018.
- Lecture, Undergraduate Math Club, Georgia Tech, March 2012.
- Undergraduate Seminar, Georgia Tech, Spring 2016, Fall 2017.
- Professors Workshops for Honors Program First-Year Retreat, Aug 2018.
- FASET Faculty Panel, Summer 2017, 2018, 2019.
- GaTech Got Talent performance, January 2019.
- On Our Side, SGA encouragement video, Spring 2019.
- iGniTe Webinar, Summer 2020.
- Advisor to student artist Lizzie Norwood, Science. Art. Wonder., Fall 2020–Spring 2021
- iGniTe Lecture, Summer 2021.
- Advisor to student artist Olena Buriakova, Science. Art. Wonder., Fall 2021–Spring 2022
- AWM Undergraduate Research Panel, Fall 2022
- REU panel, Georgia State University, Fall 2022

Outreach to the General Public

- Science Riot! Stand-up Comedy at the Atlanta Science Festival, March 2019

- Public lecture: Juggling numbers, algebra, and geometry, July 2022
- Mindcraft! The science of crafting, Atlanta Science Festival, Spring 2022
- Mathematics in Motion, Atlanta Science Festival, Spring 2022
- Mathapalooza, Atlanta Science Festival, Spring 2023
- Common Good Atlanta, Atlanta Metro Reentry Facility, Summer 2023

TEACHING ACTIVITIES

Course development

- Designed and taught course in Knot Theory, Tufts, Fall 2009.
- Introduced web-based homework to Tufts, 2009.
- Redesigned Discrete Mathematics course, Georgia Tech, Fall 2013.
- Experiments with flipped classrooms, clickers, pre-class assessments, on-line assignments, and just-in-time teaching, Georgia Tech.
- Designed and taught graduate courses on representation theory, characteristic classes, Torelli groups, and hyperbolic geometry, Georgia Tech.
- Introduced WeBWorK at Georgia Tech, Spring 2014.
- Designed and taught undergraduate course in geometric topology, Georgia Tech, Spring 2015.
- Chair, Calculus Revamp Committee, Georgia Tech, 2014–15.
- Taught informal topics course in Complex Dynamics, 2015–6.
- Published free, interactive, online textbook used in Math 1553, Jan 2018.

Other teaching activities

- Wrote and graded algebra comprehensive exams, Georgia Tech, Spring & Fall 2011.
- Reading course supervisor, Mapping Class Groups, Spring 2011.
- Reading course, Geometric Group Theory, Fall 2011, 15 participants.
- Wrote and graded topology comprehensive exams, Georgia Tech, Spring 2019, Spring 2020, Fall 2020, Spring 2021, Spring 2022, Fall 2022
- CETL faculty workshop panel, January 2019.

COMMITTEES

Departmental level

- Chair, Graduate Student Advisory Committee, Chicago, 1999–00.
- Graduate Committee, Tufts, 2008–10.
- Curriculum Committee, Tufts, 2009–10.
- Undergraduate Committee, Georgia Tech, 2011–15.
- Junior Promotion and Tenure Committee, Georgia Tech, 2012–16.
- Faculty Advisory Committee, Georgia Tech, 2010–12, 2014–16.
- Chair, Undergraduate Committee, Georgia Tech, 2014–15.
- Graduate Committee, Georgia Tech, 2017–2018.

- Undergraduate Research Coordinator, 2017–2019.
- Salary & Awards Committee, Spring 2020.
- Task Force for Equity, Diversity, and Inclusion, Summer and Fall 2020.
- Communications, Development, & Outreach Committee, Fall 2020–Spring 2022.
- Faculty Advisory Committee, Chair, Fall 2021–Spring 2022.

College and Institute level

- General Education Subcommittee of the Institute Undergraduate Curriculum Committee, Fall 2015
- Re-appointment, Promotion, & Tenure Committee, College of Sciences, 2016–17.
- College of Sciences Dean Search Committee, 2018–2019.
- CETL Awards panel, Spring 2022

National level

- AMS Southeastern Section Program Committee, 2023–2025.
- AMS Committee on Meetings and Conferences, 2019–20.
- AMS–Simons Travel Grants Committee, 2020–2023.
- Southeastern Section Program Committee, 2023–2025.

INVITED CONFERENCE TALKS

- Mapping Class Groups and Geometry of Moduli Space, AMS meeting, U of Michigan, March 2002.
- Georgia Topology Conference, June 2003.
- Albany Group Theory Conference, October 2003.
- Group Cohomology in Algebra and Geometry, AMS meeting, U of North Carolina, October 2003.
- Combinatorial Topology in Mapping Class Groups, U of Chicago, April 2004.
- Albany Group Theory Conference, October 2004.
- Braid groups, BIRS, October 2004.
- Dynamics of Mapping Class Groups on Moduli Spaces, Joint Mathematics Meetings, Atlanta, January 2005.
- Braids, Links, and Mapping Class Groups: A Conference In Honor of Joan Birman, Columbia U, March 2005.
- Curvature in Group Theory and Combinatorics, AMS meeting, UC Santa Barbara, April 2005.
- Ahlfors–Bers Colloquium, U of Michigan, May 2005.
- Spring Topology and Dynamical Systems Conference, UNC Greensboro, March 2006.
- Bay Area Topology Seminar, UC Davis, April 2006.

- Barrett Lectures, U of Tennessee, April 2006.
- Journées Peter Shalen, CRM, Montreal, June 2006.
- Conference on Geometric Group Theory, CRM, Montreal, July 2006.
- Torelli groups workshop, Chicago, August 2006.
- Low-dim. Topology & Geometry, AMS mtg, U of Utah, October 2006.
- Mapping Class Groups and Handlebodies, Joint Mathematics Meetings, New Orleans, January 2007.
- The Many Strands of the Braid Groups, BIRS, April 2007.
- Braids in Singapore, National U of Singapore, June 2007.
- Wasatch Topology Conference, U of Utah, August 2007.
- Topics in Geometric Group Theory, MSRI, November 2007.
- Finite Type Invariants, Fat Graphs and Torelli–Johnson–Morita theory, CTQM, Aarhus, March 2008.
- Examples of Groups, The Ohio State U, June 2008.
- Topology and Computer, Tokyo Institute of Technology, August 2008.
- Geometric Group Theory and Topology, AMS Meeting, Wesleyan, October 2008.
- Spring Topology and Dynamics Conference, U of Florida, March 2009.
- Geometric Groups on the Gulf Coast, South Padre Island, April 2009.
- Geometry of Outer Space, Clay Institute, October 2009.
- Spring Topology and Dynamics, Mississippi State U, March 2010.
- Pseudo-Anosovs with Small Dilatation, U of Wisconsin, April 2010.
- Subgroups of Mapping Class Groups, Hausdorff Inst., Bonn, May 2010.
- Cornell Topology Festival, Cornell U, May 2010.
- Interactions between contact symplectic topology and gauge theory in dimensions 3 and 4, Banff, March 2011.
- Mapping class groups, The Ohio State U, May 2011.
- Arithmetic Groups vs. Mapping Class Groups: Similarities, Analogies and Differences, Oberwolfach, June 2011.
- Braids in Seville, June 2011.
- Geometric Group Theory, The Technion, June 2011.
- Young Mathematicians Conference, The Ohio State U, August 2011.
- Geometry of Arithmetic Groups, AMS Meeting, Cornell, September 2010.
- Geometric Topology and Group Theory, AMS Meeting, Lawrence, KS, March 2012.
- Mapping Class Groups and Quantum Topology, IRMA, June 2012.
- Mapping Class Groups and Categorification, Banff, April 2013.
- Mathematics Research Communities: Geometric Group Theory, Snowbird, May 2013.
- Seven Crash Courses on Mapping Class Groups, JMM, Jan 2014.
- Mapping Class Groups and Teichmüller Theory, Israel, May 2014.
- Georgia Topology Conference, Athens, May 2014.

- AMS Sectional Meeting, Huntsville, March 2015.
- 40th annual Spring Lecture Series, U Arkansas, March 2015.
- Teichmüller modular groups, A Celebration of Nikolai Ivanov's 60th birthday, U Chicago, March 2015.
- Invited Address, AMS, Southeastern Section, U Alabama in Huntsville, March 2015.
- Workshop on Mapping Class Groups and $\text{Out}(F_n)$, U Texas at Austin, May 2015.
- Workshop, University of Virginia, October 2015.
- Effective and Algorithmic Methods in Hyperbolic Geometry and Free Groups, ICERM, May 2016.
- Geometry of Mapping Class Groups and $\text{Out}(F_n)$, MSRI, October 2016.
- Surface Bundles, Oberwolfach, December 2016.
- Group Actions and Geometric Structures, Special Session, JMM, Atlanta, January 2017.
- Mapping Class Groups and their Subgroups, Special Session, JMM, Atlanta, January 2017.
- Braids in Algebra, Geometry, and Topology, Edinburgh, May 2017.
- No Boundaries: Groups in Algebra, Geometry, and Topology, Chicago, October 2017.
- Texas Geometry and Topology Conference, Austin, November 2017.
- Geometry of Teichmüller space and mapping class groups, Warwick, April 2018.
- Redbud Topology Conference, Oklahoma, April 2019.
- Geometric Topology, Geometric Group Theory & Dynamical Systems, Dubrovnik, June 2019.
- Modern advances in geometric group theory, Dame Kathleen Ollerenshaw Workshop, Manchester, September 2022

INVITED SEMINAR TALKS

- 2004: Columbia (twice), Brown, Idaho State (Colloquium), Cornell (twice), Utah (twice), U Chicago, Northwestern, UIC, Rutgers.
- 2005: Urbana-Champaign, Utah (three times), Cornell, Rutgers, Ohio State, Brigham Young, Santa Barbara, UIC.
- 2006: Rutgers-Newark (Colloquium), Davis, Technion, Stony Brook, Utah, U Chicago.
- 2007: Johns Hopkins (Colloquium), Utah, Virginia, Georgia.
- 2008: Temple (Colloquium), Tufts (thrice), Michigan State (Colloquium), UC Davis (Colloquium), UIC (Colloquium), UNC (Colloquium), UC Riverside (Colloquium), CUNY Lehman (Colloquium), Brown (Topology Seminar and Undergraduate Seminar), Boston College (Colloquium), Brandeis-Harvard-MIT-Northeastern Colloquium.
- 2009: Harvard (twice).

- 2010: Georgia Tech (Colloquium), Brandeis, Georgia Tech (twice), Yale.
- 2011: Florida State (Colloquium), Oklahoma (Colloquium), Columbia, Georgia.
- 2012: Stanford, Berkeley, Chicago, Georgia Tech.
- 2013: Columbia, Rice (Colloquium), Indiana (Colloquium).
- 2014: Chicago.
- 2016: Temple (Colloquium), Berkeley (Topology Seminar, Graduate Seminar, and Colloquium), UNC Greensboro (Helen Barton Lecture Series in Computational Mathematics).
- 2017: Chicago, Vanderbilt (Seminar and Colloquium).
- 2018: Michigan (Colloquium).
- 2019: Oregon (Colloquium), PATCH Seminar (Philadelphia area)
- 2020: Australian Geometric Topology Webinar, Universidade de Brasília, KAIST, Columbia
- 2021: Brandeis, No Boundaries Seminar (Chicago)
- 2022: Copenhagen, Notre Dame, Rice (Colloquium), Vanderbilt (Seminar and Colloquium)
- 2023: Chicago (Colloquium), Georgia Tech, Columbia, Maryland (Seminar and Colloquium), Quasiworld Seminar (online)