Christopher J. Leininger

EDUCATION

- **The University of Texas**, Austin, TX
  Ph.D. in Mathematics, May 2002. Supervisor: Alan W. Reid
- **Ball State University**, Muncie, IN
  B.S. in Mathematics, May 1997

ACADEMIC POSITIONS

- **University of Notre Dame**, South Bend, IN
  Rev. John A. Zahm, Collegiate Professor, Dept. of Math., Summer 2026–Present
- **Rice University**, Houston, TX
  Professor, Dept. of Math., Summer 2020–Summer 2026
- **University of Illinois**, Urbana-Champaign, IL
  Professor, Dept. of Math., Fall 2016–Summer 2020.
  Associate Professor, Dept. of Math., Fall 2010–Fall 2016.
  Assistant Professor, Dept. of Math., Fall 2005–Summer 2010.
- **Columbia University/Barnard College**, New York City, NY
  Assistant Professor/NSF Postdoctoral Fellow, Dept. of Math., Fall 2002–Spring 2005.

EXTENDED VISITS

- **Simons Laufer Mathematical Sciences Institute**, Berkeley, CA, *Eisenbud Professor and organizer*, January – May 2026.
- **Insitut Fourier**, Grenoble, France, *Professeur Invité*, June 2018.
- **University of Warwick**, UK, *EPSRC Symposium visitor/coorganizer*, January – April 2018.
- **Mathematical Sciences Research Institute** Berkeley, CA, *Member*, Fall 2016.
- **Centro di Ricerca Matematica Ennio De Giorgi**, Pisa, Italy, June 2014.
- **Aix-Marseille Universite**, July 2013.
- **Centre de Recerca Matemàtica Barcelona**, Spain, September/October 2012.
- **Park City Math Institute**, Utah, July 2011, July 2012.
- **Oberwolfach**, Germany, May 2011, June 2011, June 2015, Dec. 2016, July 2026 (scheduled).
- **Hausdorff Research Institute for Mathematics**, Bonn, Germany, May/June 2010.
- **Université Paul Cézanne**, Marseille, France, *Professeur Invité*, June 2008.
- **Mathematical Sciences Research Institute** Berkeley, CA, *Member*, Fall 2007.
- **Max-Planck-Institut für Mathematik**, Bonn, Germany, July 2006.
- **University of Chicago**, Chicago, IL, May/June, 2006.

GRANTS & AWARDS

- *Simons Foundation Fellowship*, Spring 2027 (Recommended);
- *Breakthrough Research Award*, Rice University, College of Natural Sciences, 2025.
- *Fellow of the American Mathematical Society*, class of 2023.
- *Simons Travel Support for Mathematicians*, 10/2023–10/2028.
- N.S.F. Grants D.M.S.-060388, 0905748, 1207184, 1510034, 1811518, 2106419: 5/2006–5/2022, 5/2023–5/2026.
- *Distinguished Teaching Award in Mathematics for Tenured Faculty*, Dept. of Math., UIUC, 2019.
- *Lois M. Lackner Scholar*, Dept. of Math., UIUC, 2011–2013.
- *Campus Research Board*, UIUC, Summer 2010, spring 2007, Fall 2005.
- *Helen Corley Petit Scholar*, College of LAS, UIUC, 2010–2011.
- *N. Tenney Peck Teaching Award in Mathematics*, Dept. of Math., UIUC, 2008.

• *Center for Advanced Study Fellowship*, UIUC, Fall 2007.
• University of Texas *Graduate School Outstanding Dissertation Award*, Spring 2003
• NSF *Mathematical Sciences Postdoctoral Research Fellowship*, 2002–2005, w/ W. D. Neumann
• C.M.I. *Liftoff Mathematician*, Summer 2002
• *University Continuing Fellowship*, UT, Austin, Fall 2000 - Spring 2001

PREPRINTS & PUBLICATIONS

• (w/A.E. Kent), *Nonhyperbolic atoroidal surface bundles*, preprint.
• (w/ J. Hernandez-Hernandez and F. Valdez), *Fibrations of handlebodies*, to appear, Int. Math. Res. Not.
• (w/ Y. Wu), *Filling links and essential systole*, preprint.
• (w/ A.E. Kent), *Atoroidal surface bundles*, to appear, Annals of Math.
• (w/ E. Field, A.E. Kent, and M. Loving), *A lower bound on volumes of end-periodic mapping tori*, J. Topol. 18 (2025), no. 3, Paper No. e70037, 36 pp.
• (w/ J. Aramayona and G. Domat), *Isomorphism and commensurability of surface-Houghton groups*, *J. Group Theory* **27** (2024), no. 5, 1129–1141.
• (w/ J. Aramayona, K-U. Bux, and H. Kim), *Surface Houghton groups*, *Math. Ann.* **389** (2024), no. 4, 4301–4318.
• (w/ M. Chesser), *Purely pseudo-Anosov subgroups of the genus* 2 *handlebody group*, Groups Geom. Dyn. **20** (2026), no. 2, 475–485
• (w/ K. Rafi, N. Rouse, E. Shinkle, and Y. Verberne), *Fibered 3-manifolds and Veech groups*, *Algebr. Geom. Topol.* 25-3 (2025), 1897–1915.
• (w/ J. Russell), *Pseudo-Anosov subgroups of general fibered 3-manifold groups*, Trans. Amer. Math. Soc. Ser. B 10 (2023), 1141-1172.
• (w/ E. Bering), *Finite rigid sets in sphere complexes*, Topology Appl. **347** (2024).
• (w/ A. Reid), *Filling links in 3-manifolds of rank 2.* Appendix to: Filling links and spines in 3-manifolds, M. Freedman and V. Krushkal, to appear in Comm. Anal. and Geom.
• (w/ S. Dowdall, M. Durham, and A. Sisto), *Extensions of Veech groups II: Hierarchical hyperbolicity and quasi-isometric rigidity*, *Comment. Math. Helv.* **99** (2024), no. 1, 149–228
• (w/ E. Field, H. Kim, and M. Loving), *End-periodic homeomorphisms and volumes of mapping tori*, J. Topol. 16 (2023), no. 1, 57–105.
• (w/ V. Erlandsson and C. Sadanand), *Hyperbolic cone metrics and billiards*, Adv. Math. 409 (2022), part B, Paper No. 108662, 74 pp.
• (w/ F. Gultëpe and W. Pho-On), *A universal Cannon-Thurston map and the surviving complex*, Trans. Amer. Math. Soc. Ser. B 9 (2022), 99–143..
• (w/ J. Aramayona and A. McLeay), *Big mapping class groups and the co-hopfian property*, to appear in Michigan Math. J.
• (w/ S. Dowdall, M. Durham, and A. Sisto), *Extensions of Veech groups I: A hyperbolic action*, J. Topol. 16 (2023), no. 2, 757-805..
• (w/ M. Duchin, V. Erlandsson, C. Sadanand), *You can hear the shape of a billiard table: Symbolic dynamics and rigidity for flat surfaces*, Comment. Math. Helv., 96 (2021), no. 3, 421–463.
• (w/ Y. Minsky, J. Souto, and S. Taylor), *Weil-Petersson translation length and manifolds with many fibered fillings*, Adv. Math. 376 (2021), 54 pp.
• (w/ S.-W. Fu), *Cylinder curves in finite holonomy flat metrics*, J. Topol. Anal. 15 (2023), no. 2, 445-466.
• (w/ J. Hernandez-Hernandez and R. Maungchang), *Finite rigid subgraphs of pants graphs*, Groups Geom. Dyn. 14 (2020), no. 1, 151–175.
• (w/ A. Reid) *Pseudo-Anosov homeomorphisms not arising from branched covers*, Groups Geom.

Dyn. 14 (2020), no. 1, 151–175.
• (w/ J. Brock, B. Modami, and K. Rafi) *Limit sets of Weil-Petersson geodesics with nonminimal ending laminations*, J. Topol. Anal. 12 (2020), no. 1, 1–28.
• (w/ M. Bestvina, K. Bromberg, and A.E. Kent) *Undistorted purely pseudo-Anosov groups*, (Crelle) J. Reine Angew. Math. 760 (2020), 213–227.
• (w/ J. Brock, B. Modami, and K. Rafi) *Limit sets of Teichmüller geodesics with minimal non-uniquely ergodic vertical foliations*, (Crelle) J. Reine Angew. Math. 758 (2020), 1–66.
• (w/ J. Brock, B. Modami, and K. Rafi) *Limit sets of Weil-Petersson geodesics*, Int. Math. Res. Not. 2019, no. 24, 7604–7658
• (w/ K. Bou-Rabee) *Quotients of mapping class groups from* $Out(F_n)$, Proc. Amer. Math. Soc. 146, no.12, 5091–5096.
• (w/ A. Lenzhen and K. Rafi), *Limit sets of Teichmüller geodesics with minimal non-uniquely ergodic vertical foliations*, (Crelle) J. Reine Angew. Math. 737 (2018), 1–32..
• (w/ A. Bankovic), *Marked length spectral rigidity for flat metrics*, Trans. Amer. Math. Soc. 370 (2018), no. 3, 1867–1884.
• (w/ G. Lakeland) *Strict contractions and exotic* $SO_0(d, 1)$ *quotients*, J. Lond. Math. Soc. (2) 96 (2017), no. 3, 642–662.
• (w/ S. Dowdall and I. Kapovich), *Endomorphisms, train track maps, and fully irreducible monodromies*, Groups Geom. Dyn. 11 (2017), no. 4, 1179–1200.
• (w/ F. Gültepe), *An arc graph distance formula for the flip graph*, Proc. Amer. Math. Soc. 145 (2017), 3179–3184
• (w/ S. Dowdall and I. Kapovich) *McMullen polynomials and Lipschitz flows for free-by-cyclic groups*, J. Eur. Math. Soc. 19 (2017), no. 11, 3253–3353. .
• (w/ J. Aramayona) *Exhausting curve complexes by finite rigid sets*, Pacific J. Math. 282 (2016), no. 2, 257–283.
• (w/ I. Agol and D. Margalit) *Pseudo-Anosov stretch factors and homology of* 3*–manifolds*, J. Lond. Math. Soc. (2) 93 (2016), no. 3, 664–682.
• (w/ W. Jeon, I. Kapovich, K. Ohshika), *Conical limit points and Cannon-Thurston maps*, Conform. Geom. Dyn. 20 (2016), 58–80.
• (w/ S. Dowdall and I. Kapovich) *Dynamics on free-by-cyclic groups*, Geom. Topol. 19 (2015) 2801–2899.
• (w/ S. Dowdall and I. Kapovich), *Unbounded asymmetry of stretch factors*, C. R. Math. Acad. Sci. Paris 352 (2014), no. 11, 885–887.
• (w/ M. Clay and D. Margalit) *Abstract commensurators of right-angled Artin groups and mapping class groups*, Math. Res. Lett. 21 (2014), no. 3, 461–467
• (w/ G. Lakeland) *Systols and Dehn surgery for hyperbolic* 3*–manifolds*, Alg.& Geom. Top. 14 (2014), no. 3, 1441–1460.
• (w/ S. Dowdall and A.E. Kent IV) *Pseudo-Anosov subgroups of fibered 3-manifold groups*, Groups Geom. Dyn. 8 (2014), no. 4, 1247–1282.
• (w/ S. Schleimer) *Hyperbolic spaces in Teichmüller spaces*, J. Eur. Math. Soc. 16 (2014), no. 12, 2669–2692.
• (w/ A.E. Kent) *A geometric criterion to be pseudo-Anosov*, Michigan Math. J, 63 (2014), no. 2, 227–251.
• (w/ V. Gadre, E. Hironaka, and A.E. Kent) *Lipschitz constants to curve complexes*, Math. Res. Lett. 20 (2013), no. 4, 647–656.
• (w/ J. Aramayona) *Finite rigid sets in curve complexes*, J. Topol. Anal. 5 (2013), no. 2, 183–203.
• (w/ D. Margalit) *On the number and location of short geodesics in moduli space*, J. Topology, no. 6 (1), (2013) 30–48.

• (w/ M. Clay and J. Mangahas) *The geometry of right angled Artin subgroups of mapping class groups*, Groups Geom. Dyn. 6 (2012), no. 2, 249–278
• (w/ B. Farb and D. Margalit) *Small dilatation pseudo-Anosov homeomorphisms and 3-manifolds*, Adv. Math. 228 (2011), no. 3, 1466–1502.
• (w/ M. Mj and S. Schleimer) *The universal Cannon–Thurston map and the boundary of the curve complex*, Comment. Math. Helv. 86 (2011), no. 4, 769–816.
• (w/ A. Reid and D. Long) *Commensurators of non-free finitely generated Kleinian groups*, Algebr. Geom. Topol. 11 (2011) 605–624.
• (w/ M. Duchin and K. Rafi) *Length spectra and degeneration of flat metrics*, Invent. Math., 182 (2010) No. 2, 231–277.
• (w/ D. Margalit) *Two-generator subgroups of the pure braid group*, Geom. Dedicata 147 (2010) 107–113.
• (w/ A.E. Kent) *A fake Schottky group in Mod(S)*, *In the Tradition of Ahlfors–Bers, V*, Contemporary Math. 510, AMS, 2010, 185–196.
• *Accidental parabolics in the mapping class group*, Proc. Amer. Math. Soc. 137 (2009), no. 3, 1153–1160.
• (w/ A.E. Kent and S. Schleimer) *Trees and convex cocompactness*, (Crelle) J. Reine Angew Math. 637 (2009), 1–21.
• (w/ S. Schleimer) *Connectivity of the space of ending laminations*, Duke Math. J. 150 (2009) no. 3, 533–575.
• (w/ J. Aramayona and J. Souto) *Injections of mapping class groups*, Geom. Topol. 13 (2009) 2523–2541.
• (w/ A.E. Kent) *Uniform convergence in the mapping class group*, Ergodic Theory and Dynam. Systems **28**, (2008), 1177–1195.
• (w/ B. Farb and D. Margalit) *The lower central series and pseudo-Anosov dilatations*, Amer. J. Math. **130**, (2008), no. 3, 799–827.
• (w/ A.E. Kent) *Shadows of mapping class groups: capturing convex cocompactness*, Geom. Funct. Anal. 18 (2008), 1270–1325.
• (w/ D.B. McReynolds, W.D. Neumann, and A.W. Reid) *Length and eigenvalue equivalence*, Int. Math. Res. Not. (2007), no. 24, Art. ID rnm135, 24 pp.
• (w/ A.E. Kent) *Subgroups of the mapping class group from the geometrical viewpoint*, In the tradition of Ahlfors–Bers IV, Contemp. Math., 432, Amer. Math. Soc. Providence, RI, 2007.
• (w/ R.D. Canary) *Kleinian groups with discrete length spectrum*, Bull. London Math. Soc. **39** (2007), 189–193.
• (w/ D. B. McReynolds) *Separable subgroups of the mapping class group*, Topology Appl. **154**, (2007), no 1, 1–10.
• (w/ D. Margalit) *Abstract commensurators of braid groups*, J. Algebra **299**, (2006), 2, 447–455.
• (w/ A.W. Reid) *A combination theorem for Veech subgroups of the mapping class group*, Geom. Funct. Anal. **16**, (2006), 403–436.
• *Small curvature surfaces in hyperbolic* 3*-manifolds*, J. Knot Theory Ramifications **15**, (2006), 379–411.
• *On groups generated by two positive multi-twists: Teichmüller curves and Lehmer's number*, Geom. Topol., **8**, (2004), 1301–1359.
• *Equivalent curves in surfaces*, Geom. Dedicata **102**, (2003), 151–177.
• (w/ A. W. Reid) *The co-rank conjecture for 3-manifold groups*, *AGT.* **2**, (2002), 37–50.
• *Compressing totally geodesic surfaces*, Topology Appl. **118**, (2002), 309–328.
• *Surgeries on one component of the Whitehead link are virtually fibered*, Topology **41**, (2002), 307–320.

BOOK CHAPTERS

• *Hyperbolic structures on surfaces and geodesic currents*, in **Algorithmic and geometric topics around free groups and automorphisms**, 111–149, Adv. Courses Math. CRM Barcelona, Birkhäuser/Springer, Cham, 2017.

• *Degenerations of hyperbolic structures on surfaces*, in **Geometry, topology and dynamics of character varieties**, 95–138, Lect. Notes Ser. Inst. Math. Sci. Natl. Univ. Singap., 23, World Sci. Publ., Hackensack, NJ, 2012.

SUPERVISION and MENTORING

• **Graduate students:**

- Chia-yen Tsai (2010),
- Pradthana Jaipong (2011),
- Rasimate Maungchang (2013),
- Anja Bankovic (2013),
- Ser-Wei Fu (2014),
- Witsarut Pho-On (2017),
- Caglar Uyanik (2017, co-supervised w/ I. Kapovich),
- Marissa Loving (2019),
- Sarah Mousley (2019),
- Shixuan Li (2020),
- Christopher Loa (2021),
- Marissa Chesser (2023),
- Emily Shinkle (2023),
- Zhiyi Zhang (2025),
- Eliot Bongiovanni (2025),
- Junmo Ryang (expected 2026),
- Brian Udall (candicacy),
- Aisha Mechery (candicacy),
- Maxwell Plummer (candiacy),
- Sarah Ruth Nicholls (candidacy),
- Tianze Huang (current).
- Lily Natasha Wartman (current, co-supervised w/ A. Reid)
- Alex Lee (current)
- Devin Driggs (current)

• **Postdocs:**

- Spencer Dowdall (NSF postdoc, 2011–2015, tenured at Vanderbilt),
- Grant Lakeland (2012-2014, tenured at EIU),
- Babak Modami (2013–2015),
- Funda Gultepe (2013–2017, tenured at U Toledo),

- Jenya Sapir (2014–2017, tenured at Binghamton U),
- Chandrika Sadanand (2019-2021 at Illinois, now tenure track at Bowdoin),
- Jacob Russell (2020–2024 at Rice, NSF postdoc Fall 2021),
- George Domat (2022–2024 at Rice, 2023 NSF postdoc),
- Yandi Wu (2024–present at Rice).
- NSF Ascend Mentor for Padi Fuster Aguilera (Jan 2024 - Dec 2025, U of C, Boulder).

SELECTED INVITED CONFERENCE PRESENTATIONS

• *AMS Sectional Meeting*, **Invited Address**, Duluth, MN, October 2026 (scheduled).
• *Building Research Interconnections in Dynamics and Geometry*, Virginia, July 2026.
• *Cornell Topology Festival*, Ithaca, NY, May 2026.
• *Workshop on hyperbolic geometry and geometric group theory*, Shanghai Institute for Mathematics and Interdisciplinary Sciences, Shanghai, China, December 2025. Four lecture minicourse.
• *Computational Problems about 3-Manifolds, Groups, and Varieties*, Rutgers, Newark, October 2025.
• *Hyperbolic manifolds in dimensions 4 (and more)*, CRM, Montreal, September 2025. Four lecture minicourse.
• *Mathematical Congress of the Americas, special session*, Miami, FL, July 2025.
• *Geometric Group Theory and Related Topics*, Beijing, June 2025.
• *Barrett Memorial Conference*, U Tennessee, Knoxville, TN, May 2025.
• *Mapping class groups and beyond*, Middle East Technical University, Ankara, Turkey, May 2025.
• *Advanced School on Mapping Class Groups, Surface Subgroups, Bundles, and Group Extensions*, ICMAT, Madrid, Spain, (2 lectures) May 2025.
• *PATCH Geometry-Topology Seminar*, Temple University (2 lectures), October 2024.
• *KIAS-Rice Workshop on Geometric Topology*, Seoul, Korea, (2 lectures), September 2024.
• *Moving to higher rank: from hyperbolic to Anosov*, Centraro, Italy, July 2024.
• *Dubrovnik IX: Topology & Dynamical Systems*, Dubrovnik, Croatia, June 2024.
• *Advances in hierarchical hyperbolicity*, BIRS, Banff, Canada, May 2024.
• *Dynamics of Group Actions and Random Walks on Groups*, Fields Institute, Toronto, Canada, May 2024.
• *Surfaces, Manifolds, and Related Topics*, U Luxembourg, March 2024.
• *Summer Conference on Topology and its Applications*, plenary speaker, Youngstown State U, OH, July 2023.
• *Groups and Dynamics in Geometry*, Monte Verita, Switzerland, May 2023.
• *Workshop on Geometry of Riemann Surfaces*, Madrid, Spain, May 2023.
• *Two Day Geometry Meeting*, Bristol, UK, May 2023.
• *Special Session on Geometric Group Theory, PRIMA Conference*, UBC, Canada, December 2022.
• *Combinatorics, Dynamics and Geometry on Moduli Spaces*, CIRM, Luminy, France, Sept. 2022.
• *Reflections on Geometry: 3-Manifolds, Groups and Singularities, A Conference in Honor of Walter Neumann*, Columbia U, NY, June 2022.
• *JMM special session on low dimensional manifolds*, (virtual) April 2022.
• *55th Spring Topology and Dynamical Systems Conference*, March 2022.
• *54th Spring Topology and Dynamical Systems Conference*, Virtual, May 2021.
• *Riemann surfaces and their moduli spaces*, University of Utah, Salt Lake City, UT, Feb. 2020.
• *63rd Cascade topology seminar*, University of Manitoba, Winnipeg, Canada, September 2019.
• *Aspects of non-positive & negative curvature in group theory*, CIRM, Luminy, France, June 2019.

• *Flat surfaces and Dynamics on Moduli Spaces, II*, BIRS, Oaxaca, Mexico, May 2019.
• *Workshop on Geometry of Teichmüller Space*, Fields Institute, Toronto, Canada August, 2018.
• *Conference in honor of Mark Feighn's 60th birthday*, Midway, Utah, August 2018.
• *Bristol Topology and Groups Meeting*, University of Bristol, UK, June 2018.
• *Summer School on Teichmüller dynamics, mapping class groups, and applications*, Institut Fourier, Grenoble, France, (3 lecture mini-course), June 2018.
• *Geometry of outer spaces and outer automorphism groups*, U. Warwick, UK, April 2018.
• *Topology Day*, University at Buffalo, NY, September 2017.
• *GEAR retreat*, Stanford U, Stanford, CA, August 2017.
• *Group actions and cohomology in non-positive curvature*, Isaac Newton Institute, Cambridge, UK, June 2017.
• *Shanks conference*, Vanderbilt, TN, May 2017.
• *Teichmüller space, polygonal billiards, and interval exchanges*, CIRM, Luminy, France Feb. 2017.
• *Geometry of mapping class groups and Out(F_n)*, MSRI, Berkeley, CA October 2016.
• *Topology and Dynamics of Moduli Spaces*, IMS, Singapore August 2016.
• *Advanced School and Workshop on Geometric Group Theory and Low-Dimensional Topology: Recent Connections and Advances*, ICTP, Trieste, Italy May 2016.
• *Effective and Algorithmic Methods in Hyperbolic Geometry and Free Groups*, ICERM, Brown University, Providence, RI May 2016.
• *Integrated Conference in Geometry, Dynamics, and Topology*, Eastern Illinois University, Charleston, IL. April 2016.
• *Advanced school and workshop on geometry of discrete actions*, Trieste, Italy. September, 2015
• *New perspectives on the interplay between discrete groups in low-dimensional topology and arithmetic lattices*, Oberwolfach, Germany. June 2015
• *Low-dimensional topology workshop for Menasco's* 60^{th} *Birthday*, SUNY Buffalo, NY. May, 2015
• *Tech Topology Conference*, Georgia Tech, December 2014.
• *Teichmüller theory and surfaces in* 3*–manifolds*, Centro De Giorgi, Pisa, Italy, June 2014.
• *Georgia Topology Conference*, Athens, GA, May 2014
• *Bloomington Geometry Conference*, Bloomington, IN, April 2014
• *Redbud Topology conference*, Norman, OK, April 2014
• *Network Retreat of the GEAR Research Network in the Mathematical Sciences*, Univ. Maryland, March 2014.
• *Six Crash Course on Mapping Class Groups*, (one "crash course"), Joint Meetings of AMS/MAA, Baltimore, MD, January 2014.
• *Geometric Topology in New York*, Columbia, August 2013.
• *Growth and Mahler measures in geometry and topology*, Institute Mittag-Leffler, Sweden, July2013.
• *Geometric Topology in Cortona, Interactions of quantum topology and hyperbolic geometry*, Cortona, Italy, June 2013
• *The Topology of 3-dimensional Manifolds*, CRM, Montreal, May 2013
• *Mapping class groups and Categorification*, Banff, Canada, April 2013
• *Automorphisms of free groups: Algorithms, Geometry and Dynamics*, Barcelona, Spain, Sept. 2012.
• *Geometric structures on manifolds*, Chicago, IL, June 2012
• *Geometry and Rigidity in dimensions 2, 3, and 4*, Luminy, France, May 2012.
• *Geometry, Dynamics and Topology Day*, EIU, Charleston, IL, April 2012.
• *AMS Sectional meeting 1081*, **Invited Address**, Lawrence, KS, March 2012.
• *Texas Geometry and Topology Conference*, October, 2011.
• *Undergraduate Mathematics Symposium*, U. Illinois, Chicago, IL, October 2011.
• *William Rowan Hamilton Geometry and Topology Workshop*, Hamilton Mathematics Institute in

Trinity College Dublin, Ireland, September 2011.
• *Undergraduate summer school on Riemann surfaces*, Park City Math Institute, Park City, UT July 2011 (3 week course)
• *Arithmetic Groups vs. Mapping Class Groups*, Oberwolfach, Germany, June 2011.
• *Geometry, Topology and Dynamics of Character Varieties*, Institute of Mathematical Sciences, National University of Singapore (tutorial lecture series), July 2010.
• *Subgroups of the Mapping Class Group*, Hausdorff Institute Math., Bonn, Germany, May 2010.
• *Workshop on pseudo-Anosovs with small dilatation*, Madison, WI, April 2010.
• *Geometry and Dynamics in Surfaces and 3-manifolds II*, Park City, UT, August 2009 (3 lectures).
• *Dynamics and Geometry of Teichmüller space*, C.I.R.M. Luminy, Marseille, France, June 2009 (3 workshop lectures and plenary lecture).
• *Spring Topology and Dynamical Systems Conference*, Gainesville, FL, March 2009.
• *N+4th Southern California Topology Conference*, Pasadena, CA, January 2009.
• *Great Lakes Geometry Conference*, Ann Arbor, MI, October 2008.
• *International Workshop and Conference on Surface Mapping Class Groups and Related Topics*, NEHU, Shillong, Meghalaya, India, June 2008. (4 talks)
• *Alhfors–Bers Colloquium: Plenary speaker*, Newark, NJ, May 2008.
• *Geometric Groups on the Gulf*, Pensacola, FL, March 2008.
• *Spring Topology and Dynamical Systems Conference*, Milwaukee, WI. (20 min talk), March 2008.
• *Topics in Teichmüller theory and Kleinian groups*, MSRI, Berkeley, CA, November 2007.
• *Hyperbolic structures on 3-manifolds and the large scale geometry of Teichmüller space*, Conference at the University of Warwick, England, July 2007.
• *Cornell Topology Festival*, Cornell U., Ithaca, NY, May 2007.(2 talks)
• *Geometry and Dynamics in Surfaces and 3-manifolds*, Brown U., Providence RI, May 2007.
• *Outre-espace et Espace de Teichmüller*, C.I.R.M. Luminy, Marseille, France, February 2007.
• *Geometry, Topology, and Their Interaction*, Morelia Mexico, January 2007.
• *William Rowan Hamilton Geometry and Topology Workshop*, Hamilton Mathematics Institute in Trinity College Dublin, Ireland, September 2006.
• *Geometry and Group Theory*, Max-Planck-Institut für Mathematik, Bonn, Germany, July 2006.
• *XXth Nevanlinna Colloquium*, E.P.F. Lausanne, Switzerland, August 2005.
• *Rational Billiards and Flows on Moduli Space*, U.I.C., Chicago, IL, June 2005.
• *Wasatch Topology Conference*, Park City, UT, May 2005.
• *Alhfors–Bers Colloquium: Workshop speaker*, Ann Arbor, MI, May 2005.
• *Conference in Hyperbolic Geometry & Geometric Analysis*, Wesleyan U., Middletown, CT, October 2004.
• *Conference on Combinatorial Topology in Mapping Class Groups*, U. of Chicago, Chicago, IL, April 2004.
• *Spring Topology and Dynamical Systems Conference*, Morelia, Mexico, March 2001.
• *AMS Meeting Special Sessions: Geometric Topology*, Sectional **1214**, Boise, ID; *Groups, Geometry, and Topology*, Sectional **1164**, Virtual; *Mapping class groups*, Sectional **1146**, Auburn, AL; *Geometric Group Theory*, Sectional **1132**, Buffalo, NY; *Low-dimensional Topology and Group Theory*, Sectional **1098**, Baltimore, MD; *Geometric Topology in Low Dimensions*, Sectional **1094**, Wash. U, St. Louis, MO; *Geometric Aspect of Topology and Group Theory*, Sectional **1093**, Temple U, Philidelphia, PA; Joint meetings, Boston, MA, January 2011; *Combinatorial and Geometric Group Theory* and *Geometric Topology*, Sectional **1025**, Miami U., Oxford, OH; *Teichmüller Theory and Hyperbolic Geometry*, Sectional **1021**, Storrs, CT; *Low Dimensional Topology and Geometry*, Sectional **1019**, Salt Lake City, UT; *Mahler Measure and Heights*, **112th** Joint meetings, San Antonio, TX, January 2006; *Low Dimensional topology and Kleinian groups*, Sectional **1001**, Evanston,

IL; *Algebraic Geometry and Topology*, Sectional **994** Tallahassee, FL; *Geometry and Topology*, Sectional **981**, Salt Lake City, UT; *Hyperbolic Manifolds and Discrete Groups*, Sectional **974**, Ann Arbor, MI.

• *Seminars:* Ball State; Brandeis; Bristol; Brown; Caltech; Cambridge; Columbia; Cornell; CRM (Barcelona, Spain); CUNY; Florida State; Indiana; Inst. of Math. Polish Acad. Sciences (Warsaw, Poland); Karlsruhe (Germany); KIAS (Seoul, Korea); Lafayette College; Marseille (France); MSRI; Michigan State; NUS (Singapore); Northwestern; Notre Dame; NUI, Galway (Ireland); Purdue; Ohio State; Oklahoma State./Oklahoma U.; Oxford; Princeton; Rice; Rutgers, New Brunswick; Stanford; SUNY Stony Brook; SUNY Buffalo; Toulouse (France); Universidad Autonoma de Madrid (Spain); U Arkansas, Bristol; U Chicago; UC, Santa Barbara; U Georgia; U Glasgow; U Illinois, Chicago; U Illinois, Urbana-Champaign; U Maryland; U Michigan; U Minnesota; UNAM, Morelia, Mexico; U Texas; U Toronto; U Utah; Yale; U Warwick; U Washington; U Wisconsin, Madison; Vanderbilt; Walailak (Thailand); Washington U.St.L.

• *Colloquia:* Boston C; CCNY; Chiang-Mai U; Eastern Illinois; FSU; Indiana U; LSU; Notre Dame; Peking U; Rice; Temple; U Arkansas; U Illinois, Chicago; U Illinois, Urbana-Champaign; U Iowa; U Minnesota; U Toledo; U Toronto; U Utah; U Virginia; Vanderbilt U; U Wisconsin, Madison.

TEACHING

• **Rice:**

–Fall 2025: MATH 444/539, Geometric Topology
–Spring 2025: MATH 543, Topics in L-D Topology: Teichmüller Theory.
–Fall 2024: MATH 444/539, Geometric Topology
–Spring 2024: MATH 443/538, Topology; MATH 451/551, Differentiable Manifolds
–Fall 2023: MATH 444/539, Geometric Topology
–Fall 2022: MATH 354, Honors Linear Algebra; MATH 444/539, Geometric Topology
–Fall 2021: MATH 444/539, Geometric Topology
–Spring 2021: MATH 543, Topics in low-dimensional topology
–Fall 2020: MATH 212, Multivariable Calculus; MATH 444/539, Geometric Topology

• **U. Illinois:** (16 appearances on the Illinois *list of teachers ranked as excellent by their students*)

–Spring 2020: No teaching.
–Fall 2019, Spring 2019: MATH 241, Calculus III
–Spring 2019: MATH 241, Calculus III
–Fall 2018: No teaching.
–Spring 2018: No teaching.
–Fall 2017: MATH 241H, Calculus III; MATH 417, Intro Abstract Algebra.
–Spring 2017: MATH 231, Calculus II; MATH 595, Topics in Geometry/Topology.
–Spring 2016: MATH 417, Intro Abstract Algebra; MATH 595, Topics in Geometry/Topology.
–Fall 2015: MATH 417, Introduction to Abstract Algebra.
–Spring 2015: MATH 525, Algebraic Topology I.
–Fall 2014, Fall 2013, Spring 2013: MATH 241, Calculus III
–Spring 2014: No teaching.
–Fall 2013: MATH 241, Calculus III, (two sections, 460 students).
–Spring 2013: MATH 241, Calculus III, (two sections, 480 students).
–Fall 2011: MATH 231,249, Honors Calculus II; MATH 595, Topics course in Geometry Topology.
–Spring 2011: MATH 428, Honors topics, Knot theory; MATH 231, 249, Honors Calculus II.
–Fall 2010: MATH 427, Honors Abstract Algebra.
–Spring 2010: MATH 519, Differentiable Manifolds II.
–Fall 2009: MATH 221, Calculus I; MATH 595, Mapping class groups and curve complexes.

–Spring 2009: MATH 425, Honors Advanced Analysis; MATH 219, Differentiable Manifolds II.
–Fall 2008: MATH 218, Differentiable Manifolds I. –Spring 2008: MATH 231, 249, Honors Calculus II; MATH 595*, Differential Geometry II.
–Fall 2007: No teaching (CAS Fellowship).
–Summer 2007: Supervised two REGS; Reading course on hyperbolic geometry (w/ Jiyoung Kim, Brent Solie, Chia-yen Tsai.
–Spring 2007: MATH 231*, 249, Honors Calculus II.
–Fall 2006: MATH 520, Differentiable Manifolds; MATH 415, Linear Algebra;
–Spring 2006: MATH 230*, Honors Calculus II.
–Fall 2005: MATH 243, Calculus III+.
• **Columbia/Barnard:**
–Fall 2004: Groups and Symmetry
–Fall 2003: Algebraic Topology I
–Spring 2003: Calculus II
–Fall 2002: Calculus III.
• U.T.–Pre-calculus/Calculus, Fall 2001.

SERVICE

• **Editorship:** *Memoirs and Transactions of the American Mathematical Society*, February 2024-present. *Advances in Mathematics*, September 2022-present. *New York Journal of Mathematics*, January 2020-January 2024.

• **Selected Conferences/Programs co-organized:**
- *Topological and Geometric Structures in Low Dimensions*, Semester program, SLMath, Berkeley, CA, Spring 2026.
- *Geometry and Dynamics in Low Dimensions*, Hanoi, Vietnam, January 2025.
- *Texas Geometry and Topology Conference*, Rice University, November 2023.
- *Group Actions and Low-Dimensional Topology*, Barco de Ávila, Spain, July 2023.
- *1, 2, 3: Curves, surfaces, and 3-manifolds*, Nahsholim/Technion, Israel, May 2023.
- *Geometry, Arithmetic, and Groups*, University of Texas, Austin, June 2022.
- *Algebraic and Combinatorial Aspects of Geometric Structures*, Chiang Mai University, Thailand, July 2019;
- *Graduate Student Topology and Geometry Conference* (Faculty mentor) March 2019;
- *Geometry, Groups, and Dynamics Day*, IUPUI, 2019, Rose Hulman '18; IU, '17; Purdue '15
- *Warwick EPSRC Symposium*, Academic Year 2017-2018;
- Special Session on *Hyperbolic Geometry and Teichmüller Theory* at the Iberoamerican Congress, Valladolid, Spain;
- *Workshop and conference on mapping class groups and Out*(F_N), Austin, TX 2015;
- *GEAR Retreat*, UIUC, August 2012;
- *Braids, Links, and Mapping Class Groups*, a conference in honor of Joan Birman, Spring 2005;

• *AMS Special Sessions* co-organized at meetings 1221 (scheduled), 1198, 1109, 1081, and 1047.

• **Seminars co-organized:** Rice 2020–2026 (Topology); UIUC 2006–2020 (Differential Geometry; Geometry; Geometry, Groups, and Dynamics); 2004–2005 Geometric-topology seminar, Columbia U.

• **Selected committees:** *AMS Invited Address Committee - National Meetings*, 2025-2028. *Rice Dept. Math. Director of Graduate Studies*, 2021-2025; *Rice Graduate Council* 2021-present, *Rice Dept. Math. Diversity, Equity, and Inclusiveness*, 2020–2025, *Rice Dept. Math. Appointments* (Chair) Fall 2020 - Spring 2023; *U of I, Campus Research Board*, 2017–2020; *U of I Dept. Math. Promotion and Tenure Committee* (2017–19, chair 2018-19); *AMS-Simons Travel Grants Committee*,

2015–17; *Dept. Math. Executive Committee U of I* (2012–14); Colloquium Committee (Chair, 2009–11); U of I Teaching Awards Committee (Chair, 2008–09, 2019–20).