

THOMAS MICHAEL KOBERDA

Current as of January 28, 2019

1. PERSONAL DATA

- Born: November 4th, 1984, Evanston, IL, USA.
- Citizenship: USA.
- Email: thomas.koberda@gmail.com
- Website: <http://faculty.virginia.edu/Koberda/>

2. EDUCATION

- University of Chicago 2003 – 2007: Bachelor of Science in Mathematics with Honors.
- Harvard University 2007 – 2012: Master of Arts in Mathematics, 2008. Ph.D., 2012.
- Ph.D. Advisor: Curtis T. McMullen.
- Secondary Advisor (unofficial): Benson Farb

3. EMPLOYMENT

- NSF Postdoctoral Fellow, Yale University, 2012 – 2014.
- Gibbs Assistant Professor, Yale University, 2014 – 2015.
- Assistant Professor of Mathematics, University of Virginia, 2015 – 2019 (projected).

4. RESEARCH INTERESTS

- Topology and geometry in two and three dimensions
- Geometric group theory
- Mapping class groups
- Right-angled Artin groups
- Hyperplane arrangements
- One-dimensional dynamics

5. DOCTORAL STUDENTS

- (1) Ian Runnels, University of Virginia, current.

6. THESIS

- Title: *Mapping class groups, homology and finite covers of surfaces*
- Defense date: April 13, 2012.
- Thesis committee:
 - (1) Curtis T. McMullen
 - (2) Benson Farb
 - (3) Vaibhav Gadre

7. BIBLIOGRAPHY

- (1) Measurable sensitivity. Joint with J. James, K. Lindsey, C.E. Silva and P. Speh. *Proc. Amer. Math. Soc.* 136 (2008), no. 10, 3549–3559.
- (2) On ergodic transformations that are both weakly mixing and uniformly rigid. Joint with J. James, K. Lindsey, C.E. Silva and P. Speh. *New York J. Math.* 15 (2009) 393–403.
- (3) Asymptotic linearity of the mapping class group and a homological version of the Nielsen–Thurston classification. *Geom. Dedicata* (2012) 156:13–30.
- (4) Effective indices of subgroups in one–relator groups with free quotients. *Comm. Alg.* 39 (2011), no.11, 4336–4341.
- (5) Residual properties of fibered and hyperbolic 3–manifolds. *Topology Appl.* 160 (2013), no. 7, 875–886.
- (6) Right-angled Artin groups and a generalized isomorphism problem for finitely generated subgroups of mapping class groups. *Geom. Funct. Anal.* 22 (2012), no. 6, 1541–1590.
- (7) Entropy of automorphisms, homology and the intrinsic polynomial structure of nilpotent groups. *In the tradition of Ahlfors-Bers. VI*, 87–99, Contemp. Math., 590, *Amer. Math. Soc., Providence, RI*, 2013.
- (8) Faithful actions of automorphisms on the space of orderings of a group. *New York J. Math.* 17 (2011) 783–798.
- (9) Ping–pong lemmas with applications to geometry and topology. *Geometry, topology and dynamics of character varieties*, 139–158, Lect. Notes Ser. Inst. Math. Sci. Natl. Univ. Singap., 23, *World Sci. Publ., Hackensack, NJ*, 2012.
- (10) Embedability between right-angled Artin groups. Joint with Sang-hyun Kim. *Geom. Topol.* 17 (2013), no. 1, 493–530.
- (11) Alexander varieties and largeness for finitely presented groups. *J. Homotopy Rel. Struc.* 9 (2014), no. 2, 513–531.
- (12) An obstruction to embedding right-angled Artin groups in mapping class groups. Joint with Sang-hyun Kim. *Int. Math. Res. Notices IMRN* (2014), no. 14, 3912–3918.
- (13) The geometry of the curve complex for a right-angled Artin group. Joint with Sang-hyun Kim. *Internat. J. Algebra Comput.* 24 (2014), no. 2, 121–169.
- (14) Right-angled Artin groups and finite subgraphs of curve graphs. Joint with Sang-hyun Kim. *Osaka J. Math.* 53 (2016), 705–716.
- (15) An effective algebraic detection of the Nielsen-Thurston classification of mapping classes. Joint with Johanna Mangahas. *J. Top. Analysis* 7 (2015), no. 1, 1–21.
- (16) Anti-trees and right-angled Artin subgroups of planar braid groups. Joint with Sang-hyun Kim. *Geom. Topol.* 19 (2015), no. 6, 3289–3306.
- (17) Right-angled Artin subgroups of the interval diffeomorphism group. Joint with Hyungryul Baik and Sang-hyun Kim. *Israel J. Math.* 213 (2016), no. 1, 175–182.

- (18) Injective maps between flip graphs. Joint with Javier Aramayona and Hugo Parlier. *Ann. Inst. Fourier* 65 (2015), no. 5, 2037–2055.
- (19) The geometry of purely loxodromic subgroups of right-angled Artin groups. Joint with Johanna Mangahas and Samuel Taylor. *Trans. Amer. Math. Soc* 369, no. 11 (2017), 8179–8208.
- (20) Quotients of surface groups and homology of finite covers via quantum representations. Joint with Ramanujan Santharoubane. *Invent. Math.* 206 (2016), 269–292.
- (21) Unsmoothable group actions on compact one-manifolds. Joint with Hyungryul Baik and Sang-hyun Kim. To appear in *J. Eur. Math. Soc.*
- (22) A representation theoretic characterization of simple closed curves on a surface. Joint with Ramanujan Santharoubane. To appear in *Math. Res. Lett.*
- (23) Residually finite rationally p groups. Joint with Alexander I. Suciuc. To appear in *Comm. Contemp. Mathematics*.
- (24) Flexibility of group actions on the circle. Joint with Sang-hyun Kim and Mahan Mj. To appear as volume 2231 of *Springer Lecture Notes in Mathematics*.
- (25) Chain groups of homeomorphisms of the interval. Joint with Sang-hyun Kim and Yash Lodha. To appear in *Ann. Sci. ENS.*
- (26) Irreducibility of quantum representations of mapping class groups with boundary. Joint with Ramanujan Santharoubane. *Quantum Topology* 9 (2018), no. 4, 633–641.
- (27) Representations of surface groups with finite mapping class group orbits. Joint with Indranil Biswas, Mahan Mj, and Ramanujan Santharoubane. *New York J. Math.* 24 (2018), 241–250
- (28) Square roots of Thompson’s group F . Joint with Y. Lodha. To appear in *Ergodic Theory Dynam. Systems*.
- (29) Actions of right-angled Artin groups in low dimensions. To appear in *Handbook of Group Actions* (ed. L. Ji, A. Papadopoulos and S.-T. Yau), *International Press and Higher Education Press*.
- (30) Free products and the algebraic structure of diffeomorphism groups. Joint with Sang-hyun Kim. *J. Topol.* 11 (2018), no. 4, 1053–1075.
- (31) What is...an acylindrical group action. *Not. Amer. Math. Soc.* 65 (2018), no. 1, 31–34
- (32) Diffeomorphism groups of critical regularity. Joint with Sang-hyun Kim. Submitted.
- (33) Algorithmic Problems in right-angled Artin groups: Complexity and Applications. Joint with Ramón Flores and Delaram Kahrobaei. *J. Algebra* 519 (2019), 111–129.
- (34) Commutators, commensurators, and $\mathrm{PSL}_2(\mathbb{Z})$. Joint with Mahan Mj. Submitted.
- (35) Non-freeness of groups generated by two parabolic elements. Joint with Sang-hyun Kim. Submitted.

8. RESEARCH COLLABORATORS

- Cesar E. Silva.

- Kathryn Lindsey.
- Peter Speh.
- Jennifer James.
- Sang-hyun Kim.
- Johanna Mangahas.
- Hyungryul Baik.
- Javier Aramayona.
- Hugo Parlier.
- Samuel Taylor.
- Alexander I. Suci.
- Ramanujan Santharoubane.
- Yash Lodha.
- Mahan Mj.
- Indranil Biswas.
- Ramón Flores
- Delaram Kahrobaei

9. OTHER WRITINGS

- (1) Class field theory and the MKR dictionary for knots. Minor thesis, April 2008.
- (2) Notes on recent work of Dani Wise. Expository notes + new theorem which appears in newest version of “Residual properties of fibered and hyperbolic 3-manifolds”. December 2009.
- (3) Representations of Galois Groups on the Homology of Surfaces. Joint with A. Silberstein. Available at arXiv:0905.3002.
- (4) On some of the residual properties of finitely generated nilpotent groups. Available at arXiv:1002.3203.
- (5) Teichmüller polynomials, Alexander polynomials and finite covers of surfaces.

10. AWARDS AND HONORS

- University Scholar, University of Chicago, all quarters.
- Dean’s List, University of Chicago, all quarters.
- Paul R. Cohen Memorial Prize, University of Chicago, 2007.
- NSF Graduate Research Fellowship, 2007.
- de Valpine Fellowship, Harvard University, 2010.
- Bok Center Teaching Award, Spring 2010.
- NSF Postdoctoral Fellowship in Mathematics Sciences, 2012.
- Best paper award, Korean Mathematical Society, 2016. For paper joint with S. Kim.
- Sloan Research Fellowship, 2017.
- Kamil Duszenko Prize, 2017.
- NSF Grant DMS-1711488.

11. CONFERENCES AND TALKS

- (1) Joint Mathematics Meetings. Submitted paper session. New Orleans, LA. January 2007.

- (2) Topics in Teichmüller theory and Kleinian groups. MSRI Workshop. Berkeley, CA. November 2007.
- (3) Trivial Notions graduate student seminar. Invited talk. Harvard University, Cambridge, MA. May 2008.
- (4) Fifty Years Since Fox and Milnor: A conference on knot concordance in memory of Jerry Levine. Brandeis University, Waltham, MA. June 2008.
- (5) SMALL/Williams 20th anniversary reunion. Invited talk. Williams College, Williamstown, MA. June 2008.
- (6) Things You Can Do With $SL(2)$. Technion University, Haifa, Israel. September 2008.
- (7) Geometric Group Theory and Topology seminar at Tufts. Invited talk. Tufts University, Medford, MA. October 2008.
- (8) Trivial Notions graduate student seminar. Invited talk. Harvard University, Cambridge, MA. December 2008.
- (9) University of Michigan Topology Seminar. Invited talk. Ann Arbor, MI. April 2009.
- (10) RTG Workshop on geometric group theory. University of Michigan. Ann Arbor, MI. April 2009.
- (11) Informal Dynamics and Geometry Seminar. Invited talk. Harvard University. Cambridge, MA. May 2009.
- (12) Dynamics and Geometry of Teichmüller Space, honoring the 60th birthday of Howard Masur. CIRM, Luminy, France. June 2009.
- (13) Weil-Petersson Geometry. Central Connecticut State University, New Britain, CT. July 2009.
- (14) University of Maryland Geometry and Topology Seminar. Invited talk. College Park, MD. September 2009.
- (15) Trivial Notions graduate student seminar. Invited talk. Harvard University, Cambridge, MA. October 2009.
- (16) University of Chicago Geometry and Topology Seminar. Invited talk. University of Chicago, Chicago, IL. October 2009.
- (17) Columbia University Geometry and Topology Seminar. Invited talk. New York, NY. October 2009.
- (18) Geometric Group Theory and Topology seminar at Tufts. Invited talk. Medford, MA. November 2009.
- (19) Wasatch Topology Conference. Invited talk. Park City, UT. December 2009.
- (20) University of Michigan Topology Seminar. Invited talk. Ann Arbor, MI. January 2010.
- (21) Yale University Geometry and Topology Seminar. Invited talk. New Haven, CT. February 2010.
- (22) Worldwide Center of Mathematics. Invited talk. Cambridge, MA. March 2010.
- (23) Informal Dynamics and Geometry Seminar, Harvard University. Invited talk. Cambridge, MA. March 2010.
- (24) University of Virginia Algebra Seminar. Invited talk. Charlottesville, VA. March 2010.

- (25) Western Sectional Meeting of the American Mathematical Society. Invited talk. Albuquerque, NM. April 2010.
- (26) Virtual properties of 3-manifolds. Montreal, QC, Canada. April 2010.
- (27) Workshop on pseudo-Anosovs with small dilatation. Invited talk. Madison, WI. April 2010.
- (28) Teichmüller Dynamics and Geometry Trimester Program Conference. Invited talk. Hausdorff Institute of Mathematics, Bonn, Germany. June 2010.
- (29) Geometry, Topology and Dynamics of Character Varieties. Invited talk. Institute for Mathematical Sciences, Singapore. July 2010.
- (30) Workshop on Geometric Group Theory, Satellite of the International Congress of Mathematicians. Invited talk. Goa, India. August 2010.
- (31) Tufts University Geometric Group Theory and Topology Seminar. Invited talk. Medford, MA. September 2010.
- (32) Scottfest: Scott Wolpert's 60th birthday conference. College Park, MD. September, 2010.
- (33) Brown University Geometry and Topology Seminar. Invited talk. Providence, RI. October 2010.
- (34) Brandeis University Geometry and Topology Seminar. Invited talk. Waltham, MA. November 2010.
- (35) Joint Mathematics Meeting. Submitted paper session. New Orleans, LA. January 2011.
- (36) Southeastern Sectional Meeting of the American Mathematical Society. Invited talk. Statesboro, GA. March 2011.
- (37) Spring Topology and Dynamics Conference. Invited talk. Tyler, TX. March 2011.
- (38) Ahlfors–Bers Colloquium. Invited seminar talk. Houston, TX. March 2011.
- (39) Western Sectional Meeting of the American Mathematical Society. Invited talk. Las Vegas, NV. April 2011.
- (40) Workshop on Geometric Group Theory, Part II. Invited Talk. Louisiana State University, Baton Rouge, LA. July 2011.
- (41) Series of invited talks. KAIST, Daejeon, Korea. July and September 2011.
- (42) Series of invited talks. Chiang Mai University, Chiang Mai, Thailand. August 2011.
- (43) Invited talk, Suzhou University, Suzhou, China. August 2011.
- (44) Geometric topology and group theory seminar at Tufts. Invited talk. Medford, MA. November 2011.
- (45) University of Chicago Geometry and Topology Seminar. Invited talk. Chicago, IL. November 2011.
- (46) University of Illinois Urbana–Champaign Group Theory Seminar. Invited talk. Urbana, IL. November 2011.
- (47) Cornell University Dynamics Seminar. Invited talk. Ithaca, NY. December 2011.
- (48) Brown University Geometry and Topology Seminar. Invited talk. Providence, RI. December 2011.

- (49) Ohio State University Geometric Group Theory Seminar. Invited talk. Columbus, OH. December 2011.
- (50) Joint Mathematics Meeting. Special Session Invited talk. Boston, MA. January 2012.
- (51) Young Geometric Group Theory Meeting. Invited talk. Bedlewo, Poland. January 2012.
- (52) MPI Topology Seminar. Invited talk. Bonn, Germany. January 2012.
- (53) Informal Geometry and Dynamics Seminar, Harvard University. Invited talk. Cambridge, MA. February 2012.
- (54) UBC Topology Seminar. Invited talk. Vancouver, BC, Canada. February 2012.
- (55) Ordered Groups and Topology at BIRS. Invited talk. Banff, AB, Canada. February 2012.
- (56) Temple University Topology Seminar. Invited talk. Philadelphia, PA. February 2012.
- (57) Boston College Geometry and Topology Seminar. Invited talk. Boston, MA. April 2012.
- (58) Harvard Gauge Theory Seminar. Invited talk (thesis defense). Cambridge, MA. April 2012.
- (59) Bloomington Geometry Workshop. Invited talk. Bloomington, IN. April 2012.
- (60) RTG Conference: Progress in Hyperbolic 3-manifolds. Invited talk. Ann Arbor, MI. May 2012.
- (61) Stanford Geometry and Topology Seminar. Two invited talks. Palo Alto, CA. May 2012.
- (62) Park City Mathematics Institute Summer Session in Geometric Group Theory. Invited talk. Park City, UT. July 2012.
- (63) CUNY Graduate Center Geometry Topology Seminar. Invited talk. New York, NY. September 2012.
- (64) PATCH Seminar. Invited talk. Philadelphia, PA. September 2012.
- (65) KAIST Invited Lecture Series of four talks. Daejeon, Korea. September–October 2012.
- (66) NUS Geometry and Topology Seminar. Invited talk. Singapore. October 2012.
- (67) Yale Geometry and Topology Seminar. Invited talk. New Haven, CT. December 2012.
- (68) Canadian Mathematical Society Winter Meeting. Invited talk. Montreal, QC, Canada. December 2012.
- (69) Young Geometric Group Theory Meeting II. Haifa, Israel. February 2013.
- (70) Suzhou University, Informal invited talk. Suzhou, China. March 2013.
- (71) Mapping Class Groups and Categorification at BIRS. Banff, AB, Canada. April 2013.
- (72) Fudan University Geometry and Topology Seminar. Invited talk. Shanghai, China. June 2013.

- (73) NUS Geometry and Topology Seminar. Invited talk. Singapore. June 2013.
- (74) Joint International Meeting of the American Mathematical Society and the Romanian Mathematical Society. Invited talk. Alba Iulia, Romania. June 2013.
- (75) Interactions between low dimensional topology and mapping class groups. Invited talk. MPI, Bonn, Germany. July 2013.
- (76) KAIST Invited Lecture Series of two talks. Daejeon, Korea. July 2013.
- (77) Geometric Topology in New York. Invited talk. New York, NY. August 2013.
- (78) UIUC Group Theory Seminar. Invited talk. Urbana, IL. October 2013.
- (79) University of Virginia Mathematics Colloquium. Invited talk. Charlottesville, VA. January 2014.
- (80) Joint Mathematics Meetings. Special Session invited talk. Baltimore, MD. January 2014.
- (81) Yale Geometry and Topology Seminar. Invited talk. New Haven, CT. February 2014.
- (82) Binghamton Geometry and Topology Seminar. Invited talk. Binghamton, NY. March 2014.
- (83) Spring Topology and Dynamics Conference. Semi-plenary talk. Richmond, VA. March 2014.
- (84) Spring Southeastern Sectional Meeting. Invited talk. Knoxville, TN. March 2014.
- (85) Eastern Sectional Meeting. Invited talk. Baltimore, MD. March 2014.
- (86) Western Sectional Meeting. Invited talk. Albuquerque, NM. April 2014.
- (87) UBC Geometry and Topology seminar. Invited talk. Vancouver, BC, Canada. April 2014.
- (88) UBC Mathematics Colloquium. Invited talk. Vancouver, BC, Canada. April 2014.
- (89) Teichmüller Theory and Mapping Class Groups. Invited talk. Ramat Hanadiv, Israel. May 2014.
- (90) Cube Complexes and Groups. Invited talk. Copenhagen, Denmark. July 2014.
- (91) ICM Satellite: Geometry on Groups and Spaces. Invited Plenary Talk. Daejeon, Korea. August 2014.
- (92) Yale University Geometry and Topology seminar. Invited talk. New Haven, CT. November 2014.
- (93) GATSBY seminar introductory talk. Providence, RI. December 2014.
- (94) SNU Geometric Group Theory seminar. Invited series of talks. Seoul, Korea. January 2015.
- (95) University at Buffalo Geometry and Topology seminar. Invited talk. Buffalo, NY. February 2015.

- (96) Columbia University Geometry and Topology seminar. Invited talk. New York, NY. February 2015.
- (97) Oklahoma University Geometry and Topology seminar. Invited talk. Norman, OK. March 2015.
- (98) Oklahoma University Mathematics Colloquium. Invited talk. Norman, OK. April 2015.
- (99) Harvard Geometry and Dynamics Mini-conference. Invited talk. Cambridge, MA. May 2015.
- (100) Oberwolfach workshop on low dimensional topology and lattices in Lie groups. Oberwolfach, Germany. June 2015.
- (101) ICERM conference on computational geometric topology in arrangement theory. Invited talk. Providence, RI. July 2015.
- (102) BICMR invited lecture series on right-angled Artin groups. Beijing, China. July 2015.
- (103) University of Virginia Geometry seminar. Invited talk. Charlottesville, VA. September 2015.
- (104) University of Virginia Algebra seminar. Mini-course on finite simple groups. Charlottesville, VA. September 2015.
- (105) University of California at Santa Barbara Geometry and Topology seminar. Invited talk. Santa Barbara, CA. December 2015.
- (106) Seoul National University Geometry and Topology seminar. Invited talk. Seoul, Korea. January 2016.
- (107) Workshop on Teichmüller Theory and Low-Dimensional Topology at TSIMF. Invited talk. Sanya, Hainan, China. January 2016.
- (108) UIUC Groups Geometry and Dynamics Seminar. Invited talk. Urbana, IL. March 2016.
- (109) Spring Topology and Dynamics Conference. Invited talk. Waco, TX. March 2016.
- (110) Redbud Topology Conference. Invited talk. Norman, OK. April 2016.
- (111) University of Virginia Geometry seminar. Invited talk. Charlottesville, VA. April 2016.
- (112) Temple Geometry and Topology seminar. Invited talk. Philadelphia, PA. April 2016.
- (113) Caltech Geometry and Topology seminar. Invited talk. Pasadena, CA. May 2016.
- (114) GAGTA 2016. Invited talk. Hoboken, NJ. June 2016.
- (115) Beyond Hyperbolicity. Cambridge, UK. June 2016.
- (116) Seoul National University Geometry/Topology seminar. Series of lectures. Seoul, Korea. July/August 2016.
- (117) Tata Institute for Fundamental Research research seminar. Invited talk. Mumbai, India. July 2016.
- (118) Dynamics, Geometry, and Topology of Character Varieties. National University of Singapore. August 2016.
- (119) Convex Cocompactness AMS special session. Invited talk. Brunswick, ME. September 2016.
- (120) MSRI CAT(0) geometry conference. Berkeley, CA. September 2016.
- (121) BUGCAT 2016. Plenary talk. Binghamton, NY. October 2016.

- (122) MSRI Mapping class group conference. Berkeley, CA. October 2016.
- (123) UT Austin Geometry/Topology seminar. Invited talk. Austin, TX. November 2016.
- (124) Virginia Topology Conference 2016. Organizer. Charlottesville, VA. November 2016.
- (125) Oberwolfach workshop on surface bundles. Invited talk. Oberwolfach, Germany. December 2016.
- (126) Yale Geometry/Topology seminar. Invited talk. New Haven, CT. January 2017.
- (127) Purdue Geometry and Topology seminar. Invited talk. West Lafayette, IN. February 2017.
- (128) Purdue Mathematics Colloquium. Invited talk. West Lafayette, IN. February 2017.
- (129) Moduli spaces and applications in geometry, topology, analysis, and mathematical physics. Morningside Center of Mathematics. Invited talk. Beijing, China. March 2017.
- (130) Tsinghua University Geometry/Topology seminar. Invited talk. Beijing, China. March 2017.
- (131) Beijing University Geometry/Topology seminar. Invited talk. Beijing, China. March 2017.
- (132) Rutgers Geometry/Topology seminar. Invited talk. New Brunswick, NJ. March 2017.
- (133) CCNY Mathematics Colloquium. Invited talk. New York, NY. March 2017.
- (134) Brown University Geometry/Topology seminar. Invited talk. Providence, RI. April 2017.
- (135) Cornell University Geometry/Topology seminar. Invited talk. Ithaca, NY. April 2017.
- (136) University of Maryland Geometry/Topology seminar. Invited talk. College Park, MD. April 2017.
- (137) Cascade Topology Seminar. Invited talk. Vancouver, BC, Canada. May 2017.
- (138) Shanks Memorial Conference. Invited talk. Nashville, TN. May 2017.
- (139) GAGTA 2017. Invited talk. Bilbao, Spain. July 2017.
- (140) Seoul National University Geometry/Topology seminar. Series of invited talks. Seoul, Korea. July 2017.
- (141) Tata Institute for Fundamental Research Colloquium. Mumbai, India. August 2017.
- (142) University of Virginia Colloquium. Charlottesville, VA. September 2017.
- (143) University of Virginia Geometry seminar. Charlottesville, VA. September 2017.
- (144) University of Virginia Algebra seminar. Charlottesville, VA. September 2017.
- (145) George Mason University Geometry/Topology seminar. Fairfax, VA. September 2017.

- (146) Ohio State University Geometric Group Theory seminar. Columbus, OH. October 2017.
- (147) Ohio State University Colloquium. Columbus, OH. October 2017.
- (148) Oberwolfach workshop on complex geometry. Invited talk. Oberwolfach, Germany. October 2017.
- (149) Virginia Topology Conference 2017. Organizer. Charlottesville, VA. November 2017.
- (150) Brown University Geometry/Topology seminar. Providence, RI. November 2017.
- (151) CUNY Group Theory seminar. New York, NY. December 2017.
- (152) RIMS conference on moduli spaces. Invited talks. Kyoto, Japan. January 2018.
- (153) Hiroshima University topology seminar. Hiroshima, Japan. January 2018.
- (154) Indiana University topology seminar. Bloomington, IN. February 2018.
- (155) Indiana University mathematics colloquium. Bloomington, IN. February 2018.
- (156) University of Chicago Geometry Seminar. Invited talk. Chicago, IL. March 2018.
- (157) EPFL Geometry Seminar. Invited talk. Lausanne, Switzerland. March 2018.
- (158) Spring Topology and Dynamics Conference, co-organizer. Auburn, AL. March 2018.
- (159) Southeastern Sectional Meeting. Invited talk. Nashville, TN. April 2018.
- (160) Eastern Section Meeting. Invited talk. Boston, MA. April 2018.
- (161) UC Santa Barbara Geometry/Topology seminar. Santa Barbara, CA. May 2018.
- (162) UC Santa Barbara Mathematics Colloquium. Santa Barbara, CA. May 2018.
- (163) Seoul National University Topology seminar. Invited talk. Seoul, Korea. June 2018.
- (164) Postech Hyperbolic Geometry Conference. Invited talk. Pohang, Korea. June 2018.
- (165) KAIST minicourse. Invited series of lectures. Daejeon, Korea. June 2018.
- (166) GAGTA 2018. Co-organizer. Seoul, Korea. July 2018.
- (167) ICM Satellite Conference. Invited talk. Montevideo, Uruguay. July 2018.
- (168) Oberwolfach workshop on mapping class groups and Teichmüller theory. Invited talk. Oberwolfach, Germany. September 2018.
- (169) Tufts Geometric Group Theory seminar. Invited talk. Medford, MA. October 2018.
- (170) Eastern sectional meeting of AMS. Invited talk. Ann Arbor, MI. October 2018.
- (171) University of Michigan geometry seminar. Invited talk. Ann Arbor, MI. October 2018.

- (172) University of Michigan math circle. Invited talk. Ann Arbor, MI. October 2018.
- (173) Queens University topology seminar. Invited talk. Kingston, ON. November 2018.
- (174) Queens University mathematics colloquium. Invited talk. Kingston, ON. November 2018.
- (175) Sungkyunkwan University geometry/topology miniconference. Invited talk. Suwon, Korea. December 2018.
- (176) Groups of Dynamical Origin. Invited minicourse. Mexico City, Mexico. January 2019.

12. TEACHING EXPERIENCE

- Teaching Assistant, University of Chicago, Calculus, 2004 – 2005.
- Counselor, University of Chicago, Young Scholar’s Program, 2003 – 2005, 2006 – 2007.
- Grader, University of Chicago, honors calculus, elementary number theory, basic analysis, complex analysis, point-set topology, topics in geometry, set theory, 2005 – 2007.
- Course Assistant, Harvard University, Algebraic topology, 2008, 2009, 2011.
- Teaching Apprentice, Harvard University, Multivariable calculus, 2008.
- Tutorial, Harvard University, Combinatorial and Geometric Group Theory, spring 2010.
- Course Assistant, Harvard University, Algebraic Geometry, 2010.
- Multivariable Calculus Instructor, Harvard University, Fall 2010.
- Topics course on right-angled Artin groups, Yale University, Spring 2013.
- Multivariable Calculus Instructor, Yale University, Fall 2014.
- Introduction to Abstract Algebra, Yale University, Fall 2014.
- Undergraduate advisee at Yale, Tommy Tang (tommy.tang@yale.edu), Spring 2013–Spring 2015. Topics: analytic number theory, modular forms, p -adic analysis.
- Topics course on hyperplane arrangements, Yale University, Spring 2015.
- General Topology, University of Virginia, Fall 2015 and 2016.
- Group Theory, University of Virginia, Spring and Fall 2016.
- Senior seminar on permutation groups, University of Virginia, Spring 2017.
- Multivariable Calculus Instructor, University of Virginia, Fall 2017, Spring 2019.
- Graduate Abstract Algebra I, University of Virginia, Fall 2017.
- Graduate Abstract Algebra II, University of Virginia, Spring 2018.
- Graduate Algebraic Topology I. University of Virginia, Spring 2019.
- Undergraduate advisee at the University of Virginia, Bradley Zykoski (bpz8nr@virginia.edu), Spring 2016. Topics: differential topology and Morse theory.

- Undergraduate advisee at the University of Virginia, Luca Scerbo (ls4eg@virginia.edu), Spring 2018. Topics: orderable groups.

13. MEMBERSHIPS

- American Mathematical Society

14. PROFESSIONAL SERVICE

- Organizer of Trivial Notions graduate student seminar, Harvard University, 2008 – 2009.
- Organizer of Yale Geometry and Topology seminar, Yale University, 2012 – 2014.
- Referee for many journals
- Reviewer for *Zentralblatt*.
- Reviewer for *Mathematical Reviews*.
- Co-organizer of ICM Satellite Conference: “Geometry on Groups and Spaces”, KAIST, Daejeon, August 2014. Website: icm.cayley.kr.
- Co-organizer of the 2015 Spring Topology and Dynamics Conference.
- Co-organizer of workshop surrounding Virginia Mathematical Lectures, Fall 2015 and Fall 2017.
- Co-organizer of the Virginia Topology Conference, 2016 and 2017.
- Co-organizer of the 2018 Spring Topology and Dynamics Conference.
- Co-organizer of GAGTA 2018.

15. GRANTS RECEIVED

- (1) NSF Postdoctoral Fellowship DMS-1203964. July 2012–May 2014, \$120,000.
- (2) Conference grant “Geometry on Groups and Spaces”, DMS-1431070. July–August 2014, \$42,000.
- (3) Conference grant “Virginia topology conference 2016”, DMS-1650252. October–December 2016, \$14,998.
- (4) Simons Foundation Collaboration Grant 429836. September 2016–August 2017. \$6,000.
- (5) Sloan Research Fellowship. September 2017–August 2019. \$60,000.
- (6) NSF Grant DMS-1711488. “Homeomorphism Groups of One-manifolds: Rigidity and Regularity”. September 2017–August 2020. \$151,671.
- (7) Conference Grant DMS-1818917. “Geometric and Asymptotic Group Theory and Applications”. July 2018–June 2019. \$22,000.

16. MISCELLANEOUS

- Languages: In decreasing competence: English (native), Polish (native), French, Mandarin.
- Music: Piano: 9 years of private instruction.