

RYLEE ALANZA LYMAN

CONTACT	Department of Mathematics and Computer Science Smilth Hall, Rutgers University at Newark Newark, NJ 07102	<i>E-mail:</i> rylee.lyman@rutgers.edu <i>Mobile:</i> 952.465.6895 <i>Webpage:</i> https://ryleeananza.org
RESEARCH INTERESTS	Geometric group theory, geometric topology, outer automorphism groups, mapping class groups, Coxeter groups, deformation spaces of group actions, hyperbolic and CAT(0) geometry.	
APPOINTMENTS	Rutgers University at Newark , Assistant Professor	2024
	Rutgers University at Newark , Postdoctoral Associate, NSF Postdoctoral Fellow	2020–2024
EDUCATION	Tufts University , PhD in Mathematics (Advisor: Kim Ruane)	May 2020
	Tufts University , MS in Mathematics	May 2017
	Columbia University , BA in Mathematics (honors) & Music, <i>cum laude</i>	May 2015
RESEARCH	Étale Groupoids and Mapping Class Groups of Orbifolds and Graphs of Groups <i>In preparation.</i> (with Tyrone Ghaswala)	
	Exponential Dehn Functions for Deformation Groups of Free Splittings <i>In preparation.</i> (with Lee Mosher)	
	Conformal Dimension for Coxeter group boundaries <i>In preparation.</i> (with E. Field, R. Gupta and E. Stark)	
	One-Endedness of Outer Automorphism Groups of Free Products of Finite and Cyclic Groups <i>Submitted.</i> Available at arXiv:2305.04986 [Math.GR]	
	When is the Outer Space of a free product CAT(0)? <i>Submitted.</i> Available at arXiv:2209.04711 [Math.GR]	
	On Whitehead’s Cut Vertex Lemma <i>J. Group Theory.</i> 26(4) (2023), 665–675 Available at arXiv:2205.06071 [Math.GR]	
	Lipschitz Metric Isometries Between Outer Spaces of Virtually Free Groups <i>Illinois J. Math.</i> 67(2) (2023), 409–422 Available at arXiv:2203.09008 [Math.GR]	
	CTs for Free Products <i>Submitted.</i> Available at arXiv:2203.08868 [Math.GR]	
	Train Track Maps on Graphs of Groups <i>Groups Geom. Dyn.</i> 16(4) (2022), 1389–1422 Available at arXiv:2102.02848 [Math.GR]	
	Extensions of Hyperbolic Groups Have Locally Uniform Exponential Growth <i>Submitted.</i> (with Robert Kropholler and Thomas Ng) Available at arXiv:2012.14880 [Math.GR]	
	Folding-like Techniques for CAT(0) Cube Complexes <i>Math. Proc. Camb. Philos. Soc.</i> 173(1) (2022), 227–238 (with Michael Ben-Zvi and Robert Kropholler) Available at arXiv:2011.05374 [Math.GR]	
	Some New CAT(0) Free-by-Cyclic Groups <i>Mich. Math. J.</i> 73 (2023) 621–630 Available at: arXiv:1909.03097 [Math.GR]	
	Nielsen Realization for Infinite-Type Surfaces <i>Proc. Amer. Math. Soc.</i> 149 (2021), 1791–1799 (with S. Afton, D. Calegari and L. Chen) Available at arXiv:2002.09760 [Math.GT]	
	Train Tracks on Graphs of Groups and Outer Automorphisms of Hyperbolic Groups <i>PhD thesis.</i> Available at arXiv:2005.00164 [Math.GR]	
TALKS	Joint Mathematics Meetings <i>Geometric group theory</i> , San Francisco, CA	Jan 2024

Topology Seminar Rice University	Nov 2023
Groups, Logic and Dynamics Meeting Rutgers University at New Brunswick	Oct 2023
Algebra and Cryptology Center Seminar Stevens Institute of Technology	Oct 2023
AIM Workshop <i>Rigidity properties of free-by-cyclic groups</i> , American Institute of Mathematics	Oct 2023
AWM Research Symposium <i>Women in Groups, Geometry and Dynamics</i> , Clark University	Sep 2023
Diverse Aspects of Groups, Geometry and Dynamics Heidelberg University	Sep 2023
Special Session, CMS Summer Meeting <i>Geometric Topology, pseudo-Anosov Maps, and Complex Dynamics</i> , University of Ottawa	Jun 2023
Geometry of Subgroups Centre de Recherches Mathématiques, Montréal	May 2023
Special Session, AMS Sectional Meeting <i>Ends and Boundaries of Groups</i> , University of Cincinnati	Apr 2023
Redbud Topology Conference University of Oklahoma	Mar 2023
Special Session, AMS Sectional Meeting <i>Geometric Group Theory</i> , Georgia Institute of Technology	Mar 2023
Topology and Group Theory Seminar Vanderbilt University	Mar 2023
Topology Seminar Princeton University	Mar 2023
Young Geometric Group Theory XI Westfälische Wilhelms-Universität Münster	Feb 2023
Mathematics Colloquium Rutgers University at Newark	Dec 2022
Geometry & Topology Seminar City University of New York	Sep 2022
Wasatch Topology Conference University of Utah, Brigham Young University	Aug 2022
Big Mapping Class Groups at BC Boston College	Aug 2022
Mathematics Colloquium State University of New York at Albany	May 2022
Joint Mathematics Meetings <i>Topics and Generalizations in Geometric Group Theory</i> , Seattle <i>Low-Dimensional Manifolds</i> , Seattle	Mar 2022
Special Session, AMS Sectional Meeting <i>Subgroups in Nonpositive Curvature</i> , Tufts University	Mar 2022
Spring Topology and Dynamical Systems Conference Baylor University	Mar 2022
Tetrahedral Geometry/Topology Seminar West Chester University	Mar 2022
Joint Geometry & Topology Seminar Bowling Green State University, University of Toledo	Nov 2021
Geometry & Topology Seminar Temple University	Nov 2021
Mathematics & Statistics Colloquium Swarthmore College	Nov 2021
North British Geometric Group Theory Seminar Newcastle University	Nov 2021
Bi-College Math/Stat Colloquium Haverford College	Oct 2021

World of Geometric Group Theory	Aug 2021
Groups and Geometry in the South East Oxford University	June 2021
Nearly Carbon Neutral Geometric Topology	June 2021
Dynamics and Group Geometry Early Researchers Seminar Warwick University	May 2021
Geometric Group Theory and Topology Seminar Tufts University	Mar 2021
MAXIMALS Algebra, Geometry and Topology Seminar Heriot-Watt University	Mar 2021
Geometry and Topology Seminar Bristol University	Feb 2021
Geometry and Topology Seminar Yale University	Feb 2021
Random and Arithmetic Structures in Topology Seminar Mathematical Sciences Research Institute	Dec 2020
Geometry and Topology Seminar City University of New York	Nov 2020
Geometry and Topology Seminar Binghamton University	Oct 2020
Pure Math Seminar University of North Carolina–Greensboro	Oct 2020
Big Surf(aces) Seminar	Oct 2020
Mathematics Colloquium Rutgers University–Newark	Sep 2020
Geometric Group Theory without Boundaries Mini-course on Bass–Serre Theory	July 2020
Trends in Low-Dimensional Topology	June 2020
Geometry and Topology Online Warwick Mathematics Institute	June 2020
Topology Seminar University of California Riverside	May 2020
Geometric Topology Seminar Columbia University	Apr 2020
Topology Seminar University of Wisconsin at Milwaukee	Mar 2020
Pick My Brain Seminar Northeastern University	Feb 2020
Geometric Group Theory Seminar McGill University	Jan 2020
Hyperbolic Lunch University of Toronto	Jan 2020
Dynamics, Geometry and Groups Seminar Queens University	Jan 2020
Boston Topology Seminar Brandeis University	Jan 2020
Special Session, AMS Sectional Meeting <i>Effective and Quantitative Advances in Low Dimensional Topology and Geometric Group Theory</i> , Binghamton University	Oct 2019
Algebra/Topology Seminar State University of New York at Albany	Oct 2019
Graduate Seminar Temple University	Sep 2019
Geometry and Topology Seminar Temple University	Sep 2019
LG&TBQ University of Michigan	June 2019

	Graduate Student Conference in Algebra, Geometry and Topology Temple University	June 2019
	Spring Topology and Dynamical Systems Conference University of Alabama at Birmingham	Mar 2019
	Geometric Group Theory and Topology Seminar Tufts University	Nov 2018
	Eminar Tufts Student Seminar, 6 talks	2017–2019
CONFERENCE PARTICIPATION	Mentorship in the Mathematical Sciences Rice University	Nov 2023
	Semester Program in Geometric Group Theory Centre de Recherches Mathématiques, Montréal	Feb–Jun 2023
	Nearly Carbon Neutral Geometric Topology	Sep 2022
	Communicating Mathematics Cornell University	Aug 2022
	Geometry, Arithmetic and Groups <i>Lightning Talk</i> , University of Texas at Austin	Jun 2022
	Sage Days Duluth <i>Lightning Talk</i> , University of Minnesota at Duluth	Jun 2022
	YGGT X <i>Lightning Talk</i> , Newcastle University	July 2021
	Artin Groups, CAT(0) Geometry and Related Topics The Ohio State University	July 2021
	ParaDIGMS Spring Conference AMS, IMSI	April 2021
	Tech Topology Conference <i>Lightning Talk</i> , Georgia Institute of Technology	Dec 2020
	RTG Mini-Conference University of Utah	Feb 2020
	Tech Topology Conference <i>Lightning Talk</i> , Georgia Institute of Technology	Dec 2019
	Algorithms in Complex Dynamics and Mapping Class Groups ICERM, Brown University	Nov 2019
	Junior Geometry and Topology in the Midwest University of Wisconsin at Madison	Oct 2019
	Wasatch Topology Conference University of Utah, Brigham Young University	Aug 2019
	Aspects of Geometric Group Theory Institut des Hautes Études Scientifiques	July 2019
	Young Geometric Group Theory VIII <i>Lightning Talk</i> , Colegio Mayor Miguel de Unamuno	July 2019
	Spring Opportunities Workshop American Institute of Mathematics	Apr 2019
	Graduate Student Topology and Geometry Conference <i>Lightning Talk</i> , University of Illinois at Urbana-Champaign	Mar 2019
	Junior Geometry and Topology in the Midwest University of Wisconsin at Madison	Oct 2018
	Women and Mathematics Program Institute for Advanced Study	May 2016

OUTREACH	Panelist, "US-Based Jobs Panel," YGGT X	July 2021
	Co-organizer, Geometric Group Theory Without Boundaries Summer School	July 2021
	Participant, ParaDIGMS Diversity in Graduate Mathematical Sciences conference	Apr 2021
	Panelist, "Gender in Mathematics" Rutgers University	Mar 2021
	Co-organizer, Geometric Group Theory Without Boundaries Summer School	July 2020
	Co-organizer, Tufts Directed Reading Program	AY 2018–20
	Mentor, Tufts Directed Reading Program	Fall 2019
	Mentor, Tufts Directed Reading Program	Summer 2016
TEACHING	Rutgers University	
	Calculus II	Spring 2022
	Calculus II	Fall 2021
	Basic Linear Algebra	Fall 2021
	Calculus II	Spring 2021
	Topology	Fall 2020
	Tufts University	
	Co-organizer, Graduate Development Seminar	Spring 2020
	Co-organizer, Graduate Development Seminar	Fall 2019
	Math of Social Choice	Summer 2019
Math of Social Choice	Spring 2019	
AWARDS	Robert P. Guertin Student Leadership Award finalist	2020
	Head Teaching Assistant	AY 2019–20
SERVICE	Organizer, Young Geometric Group Theory XII	2024
	Organizer, AIM Workshop "Rigidity properties of free-by-cyclic groups"	2023
	Referee work for <i>Groups, Geom. Dyn., New York J. Math., Proc. Amer. Math. Soc., J. London Math. Soc., Rev. Mat. Iberoam., Topology Proceedings, J. Algebra</i>	
	Reviewing work for zbMath, MathSciNet	
	Organizer, Geometric Group Theory Reading Seminar	AY 2019–20
	Treasurer, Tufts Organization of Graduate Students in Mathematics	AY 2018–19
	Mathematics Department Graduate Union Steward	AY 2017–19
	Mathematics Department Representative, Tufts Graduate Student Council	AY 2017–18
	Graduate Student Member, Tufts Committee on Curricula	AY 2017–18
OTHER	Languages: English (native), German (intermediate), Japanese (intermediate)	
	Citizenship: United States of America	