Rylee Alanza Lyman

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	Newark, NJ 07102	*Webpage:* https://ryleealanza.org

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, Postdoctoral Associate — 2020–2023

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, *cum laude* — May 2015

Research

End Invariants of Outer Automorphisms of Free Products of Finite and Cyclic Groups
In preparation.

Étale Groupoids and Mapping Class Groups of Orbifolds and Graphs of Groups
In preparation. (with Tyrone Ghaswala)

Train Track Maps and CTs on Graphs of Groups
Submitted.
Available at arXiv:2102.02848 [Math.GR]

Extensions of Hyperbolic Groups Have Locally Uniform Exponential Growth
Submitted. (with Robert Kropholler and Thomas Ng)
Available at arXiv:2012.14880 [Math.GR]

Folding-like Techniques for CAT(0) Cube Complexes
To appear in Math. Proc. Camb. Philos. Soc. (with Michael Ben-Zvi and Robert Kropholler)
Available at arXiv:2011.05374 [Math.GR]

Some New CAT(0) Free-by-Cyclic Groups
To appear in the Michigan Math Journal.
Available at: arXiv:1909.03097 [Math.GR]

Nielsen Realization for Infinite-Type Surfaces
Proc. Amer. Math. Soc. **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
PhD thesis. Available at arXiv:2005.00164 [Math.GR]

Conference & Seminar Talks

Joint Mathematics Meetings — Apr 2022
Topics and Generalizations in Geometric Group Theory, Seattle
Low-Dimensional Manifolds, Seattle

Mathematics Colloquium — Mar 2022
Wesleyan University

Special Session, AMS Sectional Meeting — Mar 2022
Subgroups in Nonpositive Curvature, Tufts University

Spring Topology and Dynamical Systems Conference — Mar 2022
Baylor University

Tetrahedral Geometry/Topology Seminar — Mar 2022
West Chester University

Joint Geometry & Topology Seminar — Nov 2021
Bowling Green State University / University of Toledo

Geometry & Topology Seminar — Nov 2021
Temple University

Mathematics & Statistics Colloquium — Nov 2021
Swarthmore College

North British Geometric Group Theory Seminar — Nov 2021
Newcastle University

Bi-College Math/Stat Colloquium — Oct 2021
Haverford College

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

	Graduate Student Conference in Algebra, Geometry and Topology	June 2019
	Temple University	
	Spring Topology and Dynamical Systems Conference	Mar 2019
	University of Alabama at Birmingham	
	Geometric Group Theory and Topology Seminar	Nov 2018
	Tufts University	
	Eminar Tufts Student Seminar, *6 talks*	2017–2019
CONFERENCE PARTICIPATION	**YGGT X**	July 2021
	Lightning Talk, Newcastle University	
	Artin Groups, CAT(0) Geometry and Related Topics	July 2021
	The Ohio State University	
	ParaDIGMS Spring Conference	April 2021
	AMS, IMSI	
	Tech Topology Conference	Dec 2020
	Lightning Talk, Georgia Institute of Technology	
	RTG Mini-Conference	Feb 2020
	University of Utah	
	Tech Topology Conference	Dec 2019
	Lightning Talk, Georgia Institute of Technology	
	Algorithms in Complex Dynamics and Mapping Class Groups	Nov 2019
	ICERM, Brown University	
	Junior Geometry and Topology in the Midwest	Oct 2019
	University of Wisconsin at Madison	
	Wasatch Topology Conference	Aug 2019
	University of Utah, Brigham Young University	
	Aspects of Geometric Group Theory	July 2019
	Institut des Hautes Études Scientifiques	
	Young Geometric Group Theory VIII	July 2019
	Lightning Talk, Colegio Mayor Miguel de Unamuno	
	Spring Opportunities Workshop	Apr 2019
	American Institute of Mathematics	
	Graduate Student Topology and Geometry Conference	Mar 2019
	Lightning Talk, University of Illinois at Urbana-Champaign	
	Junior Geometry and Topology in the Midwest	Oct 2018
	University of Wisconsin at Madison	
	Women and Mathematics Program	May 2016
	Institute for Advanced Study	
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, 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	