Derrick Wigglesworth

Contact Information	
University of Arkansas	mobile: (301) 802-1431
Department of Mathematical Science	e-mail: drwiggle@uark.edu
Fayetteville, AR 72701	website: www.drwiggle.com
Research Interests	
Geometric group theory, including automorphisms of free group chine learning, natural language processing, artificial intelligence plied geometry and algebra; mathematics/STEM education & peo- integrating technology with education.	os & mapping class groups; ma- e, topological data analysis, ap- lagogy; standards based grading;
Education and Appointments	
University of Arkansas, Fayetteville, Arkansas, USA	[January 2019 – present]
Visiting Assistant Professor	
Fields Institute, Toronto, Ontario, Canada	[July – December 2018]
Postdoctoral Fellow	
University of Utah, Salt Lake City, Utah, USA	[August 2012 - May 2018]
Doctor of Philosophy, Advisor: Mladen Bestvina	
University of Maryland, College Park, Maryland, USA	[2009 - 2012]
Bachelor of Mathematics, Magna Cum Laude	

Bachelor of Physics, Magna Cum Laude

Honors and Awards

Dept. of Mathematics Outstanding Graduate Student Award, University of Utah, 2017. **Dept. of Mathematics Outstanding Senior Award**, University of Maryland, 2013. **Dept. of Mathematics Higginbotham Award**, University of Maryland, 2012.

PUBLICATIONS

- D. Wigglesworth, "Distortion for abelian subgroups of $Out(F_n)$ ", Int. J. Algebr. Comput., Volume 28 (4): p. 573-603, 2018.
- R. Gupta and D. Wigglesworth, "Loxodromics for the cyclic splitting complex and their centralizers", Pacific J. Math., Volume 301 (1): p. 107-142, 2019.
- A. Boocher and D. Wigglesworth, "Large lower bounds for the betti numbers of graded modules with low regularity", accepted for publication Collectanea Mathematica, 2020.
- M. Bestvina and K. Fujiwara and D. Wigglesworth, "Farrell-Jones conjecture for free-by-cyclic groups", arχiv:1906.00069.
- M. Bestvina and K. Fujiwara and D. Wigglesworth, "Farrell-Jones conjecture for hyperbolicby-cyclic groups", arχiv:2105.13291.

TALKS

[March 2021]
[November 2020]
[October 2020]
[March 2020]
[March 2020]

TALKS (CONT.)

• Commutative Algebra Seminar, University of Arkansas	
"Bounds on Betti numbers for some graded modules"	[October 2019]
• Topology Seminar, University of Arkansas	. ,
"Farrell-Jones Conjecture for free-by-cyclic groups"	[September 2019]
• Spring Topology & Dynamical Systems Conf., Univ. of Alabama, Birmin	ngham
"Farrell-Jones Conjecture for free-by-cyclic groups"	[March 2019]
• Topology Seminar, University of Arkansas	
"Relative hyperbolicity of free-by-cyclic groups"	[March 2019]
• Working Seminar, The Fields Institute	
"Relative hyperbolicity of free-by-cyclic groups"	[December 2018]
• AMS Fall Southeastern Sectional, University of Arkansas	
"Farrell-Jones Conjecture for free-by-cyclic groups"	[November 2018]
• Dynamics, Geometry, & Groups Seminar, Queens University	
"Groups Acting on Trees"	[August 2018]
• Ergodic Theory Seminar, University of Rennes 1	
"Loxodromics for the Cyclic Splitting Complex"	[March 2018]
• Topology Seminar, University of California Berkeley	
"Distortion for abelian subgroups of $Out(F_n)$ "	[February 2018]
• Joint Math Meetings, San Diego, CA	
"Loxodromics for the Cyclic Splitting Complex"	[January 2018]
• AMS Fall Western Sectional, University of California Riverside	
"Loxodromics for the Cyclic Splitting Complex"	[November 2017]
• Max Dehn Seminar, Univ. of Utah	
"Distortion for Abelian Subgroups of $Out(F_n)$ "	[February 2017]
• Topology Students Workshop, Georgia Tech	
"Distortion of Abelian Subgroups of Out(Fn)"	[June 2016]

TEACHING EXPERIENCE

University of Arkansas, Fayetteville, AR, USA

• Discrete Mathematics	[Summer 2020, Fall 2020, Spring 2021]
• Calculus III	[Fall 2019, Spring 2020]
• Introduction to Quantitative Reasoning	[Spring 2019]
University of Utah, Salt Lake City, Utah, USA	
• Introduction to Quantitative Analysis	[Fall 2012, Spring 2013, Spring 2014]
• Trigonometry	[Fall 2013]
• Calculus I	[Summer 2013, Summer 2016]
• Calculus II	[Summer 2014]
• Linear Algebra	[Fall 2015, Fall 2017]

Programming

Python, SQL, Git & Github, Matlab, Sage, ${\rm IAT}_{\rm E} X \, 2_{\mathcal{E}},$ Jupyter, iPython Notebook, tensorflow, openCV, pandas, scikitlearn.

Service and Outreach

Service

• Directed reading with undergraduates	[2020]
• Graduate Student Advisory Committee Cochair	[2017-2018]
• College of Science Council	[2017-2018]
• TA Training Facilitator	[Fall 2017]
• Retention Promotion & Tenure Committee	2015-2016
• Math Teacher's Circle (Workshop for K12 educators)	[Fall 2017]

Peer Reviewer

• Groups, Geometry, Dynamics	[2019, 2020, 2021]
• Geometry & Topology	[2019]
• Proceedings of the AMS	[2020]

Outreach Talks/Events

• Graduate Student Seminar, University of Arkansas	
"Spheres and algorithms in free groups"	[October 2020]
• Celebration of Mind, University of Arkansas	
"Bridges of Königsberg," Volunteer	[March 2019]
• Postdoc Seminar, University of Toronto	
"Fun with Folding in free groups"	[July 2018]
• Introductory Topology Seminar, University of California Berkeley	
"Train Tracks for Free Group Autormophisms"	[Feb 2018]
• Undergraduate Colloquium, University of Utah	
"Games of No Chance"	[Sept 2017]
• Graduate Colloquium, University of Utah	
"Limitations of a Ruler & Compass"	[Aug 2017]
• Graduate Colloquium, University of Utah	
"Turing Machines and the Halting Problem"	$[Sep \ 2014]$
• Graduate Colloquium, University of Utah	
"Hilbert's Program & Gödel's Incompleteness Theorem"	[Feb 2014]