

# Priyam Patel

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CONTACT INFORMATION	Department of Mathematics University of Utah Salt Lake City, UT 84112	<i>E-mail:</i> patelp@math.utah.edu <i>Mobile:</i> (201) 388-2225 <i>Webpage:</i> www.patelp.com
RESEARCH INTERESTS	My research interests lie in the fields of low-dimensional topology, hyperbolic geometry, and geometric group theory. In particular, I study hyperbolic manifolds, the mapping class groups of surfaces (of both finite and infinite type), separability properties of groups, right-angled Artin groups, cube complexes, Teichmüller theory, the combinatorics of 3-manifolds, and representations of surface and 3-manifold groups.	
POSITIONS	<b>University of Utah</b> , Assistant Professor	2019–present
	<b>University of California, Santa Barbara</b> , Visiting Assistant Professor	2016–2019
	<b>Purdue University</b> , Golomb Visiting Assistant Professor	2013–2016
EDUCATION	<b>Rutgers University, New Brunswick</b> , Ph.D. in Mathematics (Advisor: Feng Luo)	May 2013
	<b>New York University</b> , B.A. in Mathematics (Magna Cum Laude with Honors)	May 2008
GRANTS	NSF CAREER Grant DMS-2046889, PI <i>CAREER: The Algebra, Geometry, and Topology of Infinite Surfaces</i> , \$600,000	2021-2026
	NSF RTG Grant DMS-1840190, Co-PI <i>Algebra, Geometry, and Topology at the University of Utah</i> , \$2,492,843	2019-2024
	NSF Grant DMS-1812014 & 1937969, PI <i>The Covers, Symmetries, and Combinatorics of Manifolds</i> , \$124,997	2018-2021
	NSF-AWM Travel Grant, \$2000	2018
	AMS-Simons Travel Grant, \$4000	2015–2017
AWARDS	Mochizuki Memorial Award for Outstanding Contributions to Teaching, UCSB	2019
	Spira Teaching Award for Excellence in Undergraduate Teaching, Purdue University	2016
	National Society for Collegiate Scholars Inspiring Integrity Award	2016
	Teaching Excellence Award, Rutgers University	2011
PUBLICATIONS & PREPRINTS	<b>15. Infinite-type loxodromic isometries of the relative arc graph</b> <i>Preprint</i> (with C. Abbott and N. Miller) Available at: arXiv:2109.06106 [math.GT]	
	<b>14. Finding and combining indicable subgroups of big mapping class groups</b> <i>Preprint</i> (with C. Abbott, H. Hoganson, M. Loving, and R. Skipper) Available at: arXiv:2109.05976 [math.GT]	
	<b>13. Stable commutator length on big mapping class groups</b> <i>Preprint</i> (with E. Field and A. Rasmussen) Available at: arXiv:2108.02123 [math.GT]	
	<b>12. Free products from spinning and rotating families</b> <i>Accepted to Enseign. Math.</i> (with M. Bestvina, R. Dickmann, G. Domat, S. Kwak, and E. Stark) Available at: arXiv:2010.10735 [math.GT]	
	<b>11. Isometry groups of infinite-genus hyperbolic surfaces</b> <i>Math. Ann.</i> <b>381</b> (1) 459-498 (2021) (with T. Aougab and N.G. Vlamis)	
	<b>10. Covers of surfaces, Kleinian groups, and the curve complex</b> <i>Preprint.</i> (with T. Aougab and S. Taylor) Available at: arXiv:1810.12953 [math.GT]	
	<b>9. Effective virtual and residual properties of some arithmetic hyperbolic 3-manifolds</b> <i>Trans. Amer. Math. Soc.</i> <b>373</b> (2020), no. 11, 8219-8257. (with J. DeBlois and N. Miller)	

8. **The first integral cohomology of pure mapping class groups**  
*Int. Math. Res. Notices.* **2020** (2020), no. 22, 8973–8996. (with J. Aramayona and N.G. Vlamis)
7. **Algebraic and topological properties of big mapping class groups**  
*Algebr. Geom. Topol.* **18-7** (2018), p. 4109–4142 (with N.G. Vlamis)
6. **Building hyperbolic metrics suited to closed curves and applications to lifting simply**  
*Math. Res. Lett.* **24** (2017), no. 3, p. 593–617. (with T. Aougab, J. Gaster, and J. Sapir)
5. **Zariski closures and subgroup separability**  
*Selecta Math.* **23** (2017), Issue 3, p. 2019–2027. (with L. Louder and D.B. McReynolds)
4. **Quantifying separability in virtually special groups**  
*Pacific J. Math.* **284-1** (2016), p. 103–120. (with M.F. Hagen)
3. **On the residual finiteness growths of particular hyperbolic manifold groups**  
*Geom. Dedicata.* **185** (2016), Issue 1, p. 87–103.
2. **Residual finiteness growths of virtually special groups**  
*Math. Z.* **279** (2015), no. 1–2, p. 297–310. (with K. Bou-Rabee and M.F. Hagen)
1. **On a theorem of Peter Scott**  
*Proc. Amer. Math. Soc.* **142** (2014), p. 2891–2906.

MENTORING	Elizabeth Field, Postdoc at University of Utah	2020–present
	Alexander Rasmussen, Postdoc at University of Utah	2020–present
	Yassin Chandran, undergraduate at UCSB	2019
	Mark Pengitore, Ph.D. student at Purdue University (advisor: Ben McReynolds)	2013–2016
	Milana Golich, undergraduate at Purdue University	2014–2016
UPCOMING TALKS	Cascade Topology Conference	Oct 2021
	Talk Math With Your Friends	Nov 2021
	Geometry, Arithmetic, and Groups, UT Austin	Jun 2022
INVITED TALKS (CONFERENCES & COLLOQUIA)	Haverford College Colloquium	Oct 2021
	Summer Surfacing Conference Plenary Talk	Aug 2021
	Nearly Carbon Neutral Geometric Topology Conference Plenary Talk	Jun 2021
	University of Wisconsin, Milwaukee Colloquium	Mar 2021
	Joint Mathematics Meetings <i>Special session on Women of Color in Topology and Algebra</i>	Jan 2021
	Joint Mathematics Meetings <i>Special session on Geometry and Topology in Dimensions 3 and 4</i>	Jan 2021
	University of Denver Colloquium	Nov 2020
	In and Around Hyperbolic Geometry Barco de Avila, Spain ( <i>Cancelled due to COVID-19</i> )	Jun 2020
	Low-dimensional Topology Conference, Oberwolfach, Germany	Feb 2020
	5th Annual Graduate Student Conference in AG&T, Temple University	Jun 2019
	Geodesics on real hyperbolic manifolds, Connecticut College	Aug 2018
	Thin groups in Number Theory, Geometry and Topology, Rice University	May 2018
	Geometry of Teichmüller space and mapping class groups, University of Warwick	Apr 2018
	Graduate Student Topology and Geometry Conference, UIC	Apr 2018
	Mathematical Congress of the Americas, Special Session on Geometric Group Theory	Jul 2017
	Shanks Conference on Low-dimensional Topology and Geometry, Vanderbilt	May 2017

	Redbud Geometry/Topology Conference, University of Arkansas	Apr 2017
	AWM Research Symposium	Apr 2017
	<i>Special session on Geometric Group Theory</i> , UCLA	
	Spring Topology and Dynamics Conference	Mar 2017
	<i>Special session on Geometric Group Theory</i> , NJCU	
	Bowdoin College Colloquium	Jan 2017
	Louisiana State University Colloquium	Jan 2017
	University of Fribourg Colloquium	Dec 2016
	Temple University Colloquium	Nov 2016
	Effective and Algorithmic Methods in Hyperbolic Geometry and Free Groups	May 2016
	Women and Math Research Seminar Series, Institute for Advanced Study	May 2016
	Eastern Illinois Geometry, Dynamics and Topology Conference	Apr 2016
	Bloomington Geometry Workshop	Apr 2016
	Sectional AMS Meeting Special Session	Nov 2015
	<i>Geometry of groups, surfaces and 3-manifolds</i> , Rutgers University	
	Wasatch Topology Conference, Park City, UT	Aug 2015
	Sectional AMS Meeting Special Session	Mar 2015
	<i>Interactions Between Geometry, Group Theory &amp; Number Theory</i> , Michigan State University	
	Sectional AMS Meeting Special Session	Mar 2015
	<i>Geometric Group Theory and Topology</i> , University of Alabama	
	Third Annual Midwest Women in Mathematics Symposium Special Session	Mar 2015
	<i>Algebraic and Geometric Topology</i> , Dominican University	
	Geometry, Groups and Dynamics, Rose-Hulman Institute	Feb 2015
	Young Geometric Group Theory in the Midwest, Madison, WI	Nov 2014
	Topology Students Workshop Research Talk, Georgia Tech	Jun 2014
	Geometric Groups on the Gulf Coast Conference	Mar 2013
	Joint Meetings of the AMS Special Session	Jan 2013
	<i>Topics in geometric and analytic methods in Teichmüller theory and hyperbolic geometry</i>	
INVITED TALKS (SEMINARS)	Big Surf Seminar • UC Santa Barbara • Yale University	2021
	Ohio State University • Virtual Trends in Low-dimensional Topology Seminar	2020
	Australian Geometric Topology Webinar • UC Davis • Warwick G&T Online Seminar	
	University of Washington • UC Berkeley • Rice University	2018
	Rutgers University • UC Santa Barbara • University of Southern California • Caltech	2017
	University of Glasgow • University of Chicago • San Francisco State University	2016
	Rutgers University • CUNY	
	UT Austin • Temple University • Rutgers University	2015
	Cornell University • University of Toronto • Purdue University	
	Stanford University • UC Berkeley • University of Illinois Urbana-Champaign	2014
	Arizona State University • Michigan State University	
	Indiana University • CUNY • Purdue University • University of Michigan	2013
TEACHING EXPERIENCE	<b>University of Utah</b>	
	Math 5510 Intro to Topology I	Fall 2021
	Math 6910, RTG Seminar	Fall 2021
	Math 6520 Intro to Algebraic Topology	Spring 2021

Math 5510 Intro to Topology I	Fall 2020
Math 7853 Graduate Topics Course: <i>Mapping class groups, big and small</i>	Spring 2020
Math 2200 Discrete Mathematics	Fall 2019

**University of California, Santa Barbara**

Calculus for the Life and Social Sciences (250 students)	Spring 2019
Transition to Higher Mathematics	Winter 2019
Non-Euclidean Geometry	Fall 2018
Calculus for the Life and Social Sciences (275 students)	Spring 2018
Calculus for the Life and Social Sciences (300 students)	Winter 2018
Non-Euclidean Geometry	Fall 2017
Transition to Higher Mathematics and Math 6A Multi-Variable Calculus	Spring 2017
Transition to Higher Mathematics	Winter 2017
Multi-Variable Calculus	Fall 2016

**Purdue University**

Linear Algebra for Engineers	Spring 2016
Elementary Linear Algebra	Fall 2015
Elementary Linear Algebra	Spring 2015
Elementary Linear Algebra	Fall 2014
Elementary Linear Algebra	Spring 2014
Linear Algebra for Engineers	Fall 2013

**Rutgers University**

Topics in Math for the Liberal Arts	Fall 2012
Introductory Linear Algebra	Summer 2011
Calculus I	Summer 2010

SERVICE  
(CONFERENCES &  
SEMINARS)

<b>Co-organizer</b> , Roots of Unity Workshop <i>Professional and research development workshop for women of color graduate students.</i>	2021–present
<b>Co-organizer</b> , Max Dehn Seminar	2019–present
<b>Co-organizer</b> , Wasatch Topology Conference (bi-annual conference)	2020–present
<b>Co-organizer</b> , Topology Learning Seminar	2020–present
<b>Co-organizer</b> , AMS Sectional Meeting Special Session, UVA ( <i>Cancelled due to COVID-19</i> )	Mar 2020
<b>Co-organizer</b> , RTG Conference, University of Utah	Feb 2020
<b>Co-organizer</b> , AIM Workshop “Surfaces of infinite type”	Apr 2019
<b>Organizer</b> , UCSB Topology Seminar	2018–2019
<b>Co-organizer</b> , Topology Students Workshop, Georgia Institute of Technology <i>Professional development workshop for graduate students.</i>	Jun 2016
<b>Co-organizer</b> , Geometry, Groups, and Dynamics Conference, Indianapolis, IN	Mar 2016
<b>Co-organizer</b> , Purdue University Geometry Seminar	2013–2016

SERVICE  
(COMMITTEES)

<b>Faculty Chair</b> of the Association for Women in Math, University of Utah Chapter	2021–present
<b>Thesis Committee</b> , Hanna Astephan, Matthew Goroff, Emily Smith	2019–2021
<b>Oral Exam Committee</b> , Sanghoon Kwak	2021
<b>EDI Committee</b> , University of Utah Mathematics Department	2020–2021
<b>Graduate Admissions Committee</b> , Mathematics Department	2020–2021
<b>Development Committee</b> , Mathematics Department	2019–2021
<b>Search Committee</b> , Assistant VP for Faculty Equity & Diversity, University of Utah	Apr 2020
<b>Colloquium Committee</b> , Mathematics Department	2019–2020

SERVICE (OTHER)	<b>Organizer</b> , Speaker Series at the University of Utah <i>Highlighting accomplishments of high-profile individuals from marginalized groups in STEM</i>	2021–present
	<b>Referee Work</b> , <i>Int. Math. Res. Not., Algebr. Geom. Topol., New York J. Math., Q. J. Math. Geom. Topol., Proc. Amer. Math. Soc., J. Lond. Math. Soc., Trans. Amer. Math. Soc.</i>	2015–present
	<b>Leader</b> , NCNGT Conference Open Problem Session on Infinite-type Surfaces	Jun 2021
	<b>Speaker</b> , Summer ACCESS Program, University of Utah	2020 & 2021
	<b>Mentor</b> , Topology Students Workshop, Georgia Institute of Technology	Jul 2020
	<b>Panelist</b> , "Funding opportunities for postdoctoral researchers", University of Utah	Sep 2019
	<b>Panelist</b> , UCSB Promise Scholar Panel "How to talk to your professors."	Aug 2018
	<b>Panelist</b> , UCSB AWM Panel "Graduate school and beyond."	Apr 2018
	<b>Host</b> , UCSB Faculty Nights, "An uncensored discussion about gender discrimination." <i>Interactive event bringing together students &amp; faculty through the exploration of a hot topic.</i>	Feb 2018
	<b>Speaker</b> , UCSB AWM Research Talk for Undergraduates	Feb 2018
	<b>Speaker</b> , Research talk for REU at UCSB	Jul 2017
	<b>Co-organizer</b> , UCSB AWM and Hypatian Seminar joint events	2016–2017
	<b>Panelist</b> , Women in STEM Mentorship Program, Life in Academia Panel, UCSB	Mar 2017
	<b>Teaching Assistant</b> , Institute for Advanced Study Women and Mathematics Program	May 2016
	<b>Speaker</b> , Basic Skills Workshop- Networking, CVs, and webpages, Purdue University	Oct 2015
	<b>Panelist</b> , Basic Skills Workshop - Job Market Panel, Purdue University	Sep 2014
	<b>Mentor</b> , Topology Students Workshop, Georgia Institute of Technology	Jun 2014
	<b>Founder and organizer</b> , Math Women's Tea, Rutgers University	2011–2013
	<b>Co-organizer</b> , Rutgers University NSF ADVANCE Women in Math Dinners	2011–2013
	EDUCATIONAL OUTREACH	<b>Presenter</b> , Science Day at the U, University of Utah
<b>Workshop Leader</b> , Defining Your Path, Middle school outreach event at University of Utah		Nov 2019
<b>Volunteer</b> , Math outreach event at The Wolf Museum of Exploration + Innovation		May 2018
<b>Speaker</b> , High school outreach, Avenues: The World School, New York, NY		Dec 2017
<b>Instructional assistant</b> , NJ Partnership for Excellence in Middle School Mathematics <i>Middle school teachers training and outreach program.</i>		2012 & 2013
IN THE PRESS	Kevin Hartnett. "Math After COVID-19", <i>Quanta Magazine</i>	Apr 2020
	Kevin Harnett. "Mathematics as a Team Sport", <i>Quanta Magazine</i>	Mar 2020
REFERENCES	<b>Feng Luo</b> fluo@math.rutgers.edu <b>Alan Reid</b> alan.reid@rice.edu <b>Ruth Charney</b> charney@brandeis.edu <b>Darren Long</b> long@math.ucsb.edu <b>Christopher Leininger</b> cjl12@rice.edu <b>David Ben McReynolds</b> dmcreyno@purdue.edu <b>Maria Isabel Bueno Cachadina</b> (Teaching reference) mbueno@math.ucsb.edu	
MISCELLANEOUS	<b>Citizenship:</b> United States of America	