

Puck Rombach

CONTACT INFORMATION	University of Vermont Department of Mathematics & Statistics Burlington, VT 05401 The United States	+1 323 239 3341 puck.rombach@uvm.edu www.uvm.edu/~mrombach
EMPLOYMENT	Assistant Professor , University of Vermont Mathematics Graduate Program Coordinator Assistant Adjunct Professor , University of California, Los Angeles	2017-present 2020-21 2013-17
EDUCATION	D.Phil. (Ph.D.) in Mathematics , University of Oxford, UK Advisors: Mason A. Porter and Alex Scott M.Sc. in Mathematics and Computer Science , University of Oxford, UK B.Sc. in Liberal Arts and Sciences , University of Utrecht, Roosevelt Academy, NL	2013 2009 2008
TEACHING	UVM : Graph Theory, Combinatorics, Probabilistic Combinatorics, Extremal Combinatorics, Spectral Graph Theory, Real Analysis, Complex Analysis, Algebra, Linear Algebra UCLA : Probability, Combinatorics, Linear Algebra, Discrete Mathematics, Python University of Oxford (Somerville College Tutorials): Linear Algebra, Analysis, Dynamics, Fourier Series, PDEs, Multivariate Calculus	2017-present 2013-17 2012-13
STUDENT RESEARCH	Ph.D. Advisor, UVM : Hunter Rehm, Calum Buchanan, Jeremy Quail, Colin Giles M.Sc. Thesis Advisor, UVM : Jo Martin (2020-2021 UVM Outstanding Master's Thesis Award) Faculty Mentor , Graduate Research Workshop in Combinatorics Undergrad. Independent Research, UCLA : Luke Harmon, Robert Gevorgyan Mentor , UCLA Research Experience for Undergraduates	current 2020 2019-22 2016 2014-15
CONFERENCES	Organizer, Special Session <i>AMS Special Session on Research from the Graduate Research Workshop in Combinatorics</i> , Joint Mathematics Meetings Organizer, Special Session, Saturation , 51 st Southeastern International Conference on Combinatorics, Graph Theory & Computing Organizer, Summer Combo, UVM , 1-day conference, 50 attendees	2023 2020 2019
PREPRINTS & PUBLICATIONS	<i>The effect of the Katz parameter on node ranking, with a medical application</i> , Hunter Rehm, Mona Matar, Puck Rombach, Lauren McIntyre. arXiv:2210.06392, 2022. <i>Rainbow saturation</i> , Neal Bushaw, Daniel Johnston, Puck Rombach. <i>Graphs and Combinatorics</i> , 38(166), 2022. <i>On the last new vertex visited by a random walk in a directed graph</i> , Calum Buchanan, Paul Horn, Puck Rombach. arXiv:2209.08079, 2022. <i>Odd covers of graphs</i> , Calum Buchanan, Alexander Clifton, Eric Culver, Jiaxi Nie, Jason O'Neill, Puck Rombach, Mei Yin. arXiv:2202.09822, 2022. <i>Guessing numbers and extremal graph theory</i> , Jo Martin, Puck Rombach. <i>The Electronic Journal of Combinatorics</i> , 29(2): P2.58, 2022. <i>Subgraph complementation and minimum rank</i> . Calum Buchanan, Christopher Purcell, Puck Rombach. <i>The Electronic Journal of Combinatorics</i> , 29(1): P1.38, 2022. <i>Distinguishing generalized Mycielskian graphs</i> , Debra Boutin, Sally Cockburn, Lauren Keough, Sarah Loeb, K. E. Perry, Puck Rombach. <i>Australasian Journal of Combinatorics</i> , 83(2): 225–242, 2022.	

Symmetry parameters of various hypercube families, Debra Boutin, Sally Cockburn, Lauren Keough, Sarah Loeb, Puck Rombach. *The Wilfried Imrich Issue of the Art of Discrete and Applied Mathematics*, 2022.

Symmetry parameters for Mycielskian graphs, Debra Boutin, Sally Cockburn, Lauren Keough, Sarah Loeb, K. E. Perry, and Puck Rombach. *Research Trends in Graph Theory and Applications*. Springer, Cham, 2021. 99-117.

Role colouring graphs in hereditary classes, Christopher Purcell, Puck Rombach. *Theoretical Computer Science*, 876: 12-24, 2021.

A guide to choosing and implementing reference models for social network analysis, Elizabeth A. Hobson, Matthew J. Silk, Nina H. Fefferman, Daniel B. Larremore, Puck Rombach, Saray Shai, Noa Pinter-Wollman. *Biological Reviews*, 96(6), 2021.

Determining number and cost of generalized Mycielskian graphs, Debra Boutin, Sally Cockburn, Lauren Keough, Sarah Loeb, K. E. Perry, Puck Rombach. arXiv:2007.15284, 2020.

Lower bounds for rainbow Turán numbers of paths and other trees, Daniel Johnston, Puck Rombach. *The Australasian Journal of Combinatorics*, 78(1), 2020.

Core-periphery structure in networks (revisited), Puck Rombach, Mason A. Porter, James H. Fowler, Peter J. Mucha. *SIAM Review*, 59(3): 619-646, 2017.

Rank aggregation for course sequence discovery, Charles Z. Marshak, Mihai Cucuringu, Dillon Montag and Puck Rombach. *Complex Networks & Their Applications VI*: 139-150, 2017.

Guessing numbers of odd cycles, Ross Atkins, Puck Rombach, Fiona Skerman. *The Electronic Journal of Combinatorics*, 24(1): P1.45, 2017.

Growth and containment of a hierarchical criminal network, Charles Z. Marshak, Puck Rombach, Andrea L. Bertozzi, Maria R. D’Orsogna. *Physical Review E*, 93: 022308, 2016.

On the complexity of role colouring planar graphs, trees and cographs, Christopher Purcell, Puck Rombach. *Journal of Discrete Algorithms*, 35: 1-8, 2015.

Detection of core-periphery structure in networks using spectral methods and geodesic paths, Mihai Cucuringu, Sang Hoon Lee, Puck Rombach, Mason A. Porter. *European Journal of Applied Mathematics*, 27(6): 846-887, 2016.

Core-periphery structure in networks, Puck Rombach, Mason A. Porter, James H. Fowler, Peter J. Mucha. *SIAM Journal on Applied Mathematics*, 74(1): 167-190, 2014.

Core-periphery organisation of human brain dynamics, Danielle S. Bassett, Nicholas F. Wymbs, Puck Rombach, Mason A. Porter, Peter J. Mucha, Scott T. Grafton. *PLoS Computational Biology*, 9(9): e1003171, 2013.

Commentary: Teach network science to teenagers, Heather A. Harrington, Mariano Beguerisse-Díaz, Puck Rombach, Laura M. Keating, Mason A. Porter. *Network Science*, 1(2): 226-247, 2013.

HONORS	SIGEST award from SIAM (for the paper “Core-Periphery Structure in Networks”, SIAM Journal of Applied Mathematics, 2014)	2017
SCHOLARSHIPS AND GRANTS	Award from the Northeastern Combinatorics Network (NSF grant #1853455) to run the conference Summer Combo	2019
	UVM Office of the Vice President for Research EXPRESS Grant	2018
	AWM/NSF Travel Grant	2015
	Huygens Scholarship for M.Sc. support	2008-09
SEMINARS	UVM Combinatorics Seminar Oxford Networks Club	2019,-20,-22 2011-13

SERVICE	NSF Reviewer	2020-22
OUTREACH	Nerd Nite LA , speaker, comedy/science event, <i>Mathematics of Juggling</i> , 2014 Shing-Tung Yau High School Mathematics Award , panelist, 2014 & 2015 Mathematics Workshops for Schools , conducted workshop sessions and organized events. See YouTube video “Sharing the beauty of networks" http://youtu.be/9dcdjcyA-8E Creative Maths for Kids , bi-weekly sessions with children aged 9-14. 2009-2013	