

Juan Francisco Romero Acosta

CONTACT INFORMATION	Mathematical Sciences Institute Hanna Neumann Building 145 The Australian National University Canberra ACT 2601, Australia	E-mail: Francisco.Romero@anu.edu.au Office: 2.71
RESEARCH INTERESTS	Geometric Measure Theory; Harmonic Analysis.	
APPOINTMENTS	Postdoctoral Fellow The Australian National University	August 2023 - present
EDUCATION	Virginia Tech , Blacksburg, VA. Ph.D. in Mathematics M.S. in Mathematics Advisor: Eyvindur Ari Palsson. San Marcos University , Lima, Peru. B.S. in Mathematics	August 2017 - May 2023 Awarded May 2023 Awarded December 2019 March 2010 - December 2015
PUBLICATIONS	<ol style="list-style-type: none">1. R. Ascoli, L. Betti, J. Cheigh, A. Iosevich, R. Jeong, X. Liu, B. McDonald, W. Milgrim, S. J. Miller, F. Romero Acosta, and S. Velazquez Iannuzzelli, <i>A VC-dimension of hyperplanes over finite fields</i>, Graphs and Combinatorics (2025), vol. 41, article number 47. arXiv:2307.10425.2. E.A. Palsson and F. Romero Acosta, <i>A Mattila-Sjölin Theorem for Simplices in Low Dimensions</i>, Mathematische Annalen (2024), Volume 391, pg 1123–1146. arXiv:2208.07198 .3. R. Ascoli, L. Betti, J. Cheigh, A. Iosevich, X. Liu, B. McDonald, W. Milgrim, S.J. Miller, F. Romero Acosta and S. Velazquez Iannuzzelli, <i>VC-Dimension and Distance Chains in \mathbb{F}_q^n</i>, Korean J. Math (2024), no. 1, 43–57. arXiv:2210.03058 .4. E.A. Palsson and F. Romero Acosta, <i>A Mattila-Sjölin Theorem for Triangles</i>, Journal of Functional Analysis 284 (2023), no. 6, 109814. arXiv:2109.13429.5. R. Ascoli, L. Betti, J. Lehmann Duke, X. Liu, W. Milgrim, S.J. Miller, E.A. Palsson, F. Romero Acosta and S. Velazquez Iannuzzelli, <i>Distinct Angles and Angle Chains in Three Dimensions</i>, Discrete Mathematics & Theoretical Computer Science, 25 (2023), no. 1, Paper No. 2, 19pp. arXiv:2208.13284 .	
IN PREPARATION	<ol style="list-style-type: none">1. A. Rose (Formerly L. Cladek) and F. Romero Acosta, <i>On the hyperbolic fractal uncertainty principle</i>.2. T. Borges, B. Foster, Y. Ou, E. Palsson, and F. Romero Acosta, <i>Applications of a bilinear Sobolev bound to point configurations</i>. (manuscript available upon request).3. T. Borges, B. Foster, Y. Ou, E. Palsson, and F. Romero Acosta, <i>General point configuration graph pinning</i>. (manuscript available upon request).	
GRANTS	AMS Grad Student Travel Grant , 1,300 \$ available for travel to be used within the last year of the Ph.D. program.	Fall 2022 - Spring 2023

WORKSHOPS ATTENDED	ANU Futures Workshop: Recent Progress of Harmonic Analysis in General Relativity and Quantum Information. Mathematical Sciences Institute November 17 - 22 in Canberra ACT, Australia.	2025
	On the Interface of Geometric Measure Theory and Harmonic Analysis. Banff International Research Station June 9 - 14 in Banff, Alberta, Canada.	2024
	Harmonic Analytic Connections. MATRIX Research Program May 27 - 31 in Creswick, Victoria, Australia.	2024
SEMINAR TALKS	<i>Abundance of triangles in thin fractal sets,</i> Analysis & PDE Seminar , Australian National University, September 18, 2024.	
	<i>Triangles in thin fractal sets,</i> Barcelona Analysis Seminar , Universitat de Barcelona, February 1, 2024.	
	<i>A Mattila-Sjölin theorem for k-simplices in lower dimensions,</i> Analysis & Math Physics Seminar , Virginia Tech, October 19, 2022.	
	<i>A Mattila-Sjölin theorem for triangles,</i> Analysis & Math Physics Seminar , Virginia Tech, March 16, 2022.	
CONFERENCE TALKS	<i>A Mattila-Sjölin theorem for triangles in dimension 3 and higher,</i> Spring Central Sectional Meeting University of Cincinnati, Cincinnati OH, April 15, 2023.	
	<i>A Mattila-Sjölin theorem for triangles in dimension 3 and higher,</i> Harmonic Analysis and Fractal Sets 2023 - HAFS 2023 Ohio State University, Columbus OH, March 25, 2023.	
	<i>A Mattila-Sjölin theorem for triangles,</i> AMS Special Session on Distance Problems in Continuous, Discrete and Finite Field Settings Joint Mathematics Meeting, Boston MA, January 7, 2023.	
POSTERS	<i>On the Next Generation Matrix,</i> VII International Workshop on Applied Mathematics , Jorge Basadre Grohmann University, Tacna, Peru, October 2015.	
CONFERENCE ATTENDED	The Young Mathematicians Conference (YMC), Ohio State University, Columbus OH, August 2022.	
	Canadian Mathematical Society Winter Meeting, Online, December 2021.	
	Virtual Harmonic Analysis, Online, Spring 2020.	
	The Second Mid-Atlantic Analysis Meeting, Online, October 2020.	
	Mathematical Physics at the Crossings, in honor of the 65th Birthday of Dr. George Hagedorn, Virginia Tech, Blacksburg VA, May 2019.	

XII International Seminar on Bio-mathematics (SEBIMAT),
Organized by the School of Mathematics of Peru, University of Lima, Lima, Peru,
August 2016.

Mathematical and Stochastic Models on Epidemiology Applied , Organized by the Ministry of Health, University of Lima, Lima, Peru, November 2015.

Computer Science Seminar,

San Marcos University, Lima, Peru, October 2015.

VII International Workshop on Applied Mathematics,
Jorge Basadre Grohmann University, Tacna, Peru, October 2015.

XII International Seminar on Optimization and Related Areas,
Instituto de Matemática y Ciencias Afines - IMCA, Lima, Peru, October 2015.

MENTORING	SMALL Summer REU June - August 2022 Graduate assistant.	Williams College Williamstown, MA
OUTREACH	Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) Student Chapter Spring 2023 Founding Vice-President Multicultural and multidisciplinary STEM diversity organization that connects students and faculty to career resources and networking	Virginia Tech Blacksburg, VA
	Virginia Tech Math Circle October 2019 / September 2022 Prepared activities and led sessions for elementary and middle school students	Virginia Tech Blacksburg, VA
	Harmonic Analysis People's Presentation on YouTube (HAPPY) December 2022 Recorded presentation <i>A Mattila-Sjölin theorem for triangles</i>	HAPPY Chanel
TEACHING EXPERIENCE	Lecturer July 2024 - present Math 1113: Calculus Math 3320/6212: Advanced Studies Extension - Introduction to Geometric Measure Theory Math 1113: Calculus	Mathematical Science Institute, ANU Canberra, ACT Semester 2 - 2024
	Graduate Teaching Assistant Summer 2018 - Spring 2023 Teaching Assistant - Math 1225: Calculus I. Lecturer - Math 1225: Calculus I. Lecturer - Math 1226: Calculus II. Lecturer - Math 2214: Int. to Differential Equations. Lecturer - Math 2214: Int. to Differential Equations.	Virginia Tech Blacksburg, VA Summer 2018 Fall 2018 Spring 2019 Summer 2019 Fall 2019 Spring 2020 Fall 2020 Spring 2021

Lecturer - Math 2214: Int. to Differential Equations.	Fall 2021	
Lecturer - Math 1226: Calculus II.	Spring 2022	
Lecturer - Math 1226: Calculus II.	Fall 2022	
Tutor Fall 2017 - Spring 2018 Elementary Calculus Tutor.	Math Emporium, Virginia Tech Blacksburg, VA	
Tutor March 2017 - July 2017 Elementary Calculus Tutor.	Universidad Peruana de Ciencias Aplicadas, UPC Lima, Peru	
Teacher September 2014 - May 2017 Arithmetic and Geometry teacher.	TRILCE Educational Organization Lima, Peru	
Teacher July 2013 - December 2014 Geometry teacher.	Pamer Educational Corporation Lima, Peru	
MEMBERSHIP	Member of the American Mathematical Society	August 2017 - 2023
AWARD	2015 Outstanding Academic performance San Marcos University, Lima, Peru.	December 2015