

Jacob Carruth

CONTACT INFORMATION	Department of Mathematics Princeton University Fine Hall, Washington Road Princeton, NJ 08544	jccarruth@math.princeton.edu
RESEARCH INTERESTS	Broad: Analysis, Applied Mathematics Specific: Adaptive control theory, Whitney extension problems, Fourier analysis	
EMPLOYMENT	Postdoctoral Research Associate Princeton University, Princeton, NJ	2019 - present
EDUCATION	Ph.D. in Mathematics The University of Texas at Austin, Austin, TX	2019
	B.A. in Mathematics New York University, New York, NY	2013
PUBLICATIONS AND PREPRINTS	J. Carruth. <i>A Bounded Regret Strategy for Linear Dynamics with Unknown Control</i> , preprint, 33 pages. J. Carruth, M. Eggl, C. Fefferman, C. Rowley. <i>Controlling Unknown Linear Dynamics with Almost Optimal Regret</i> , arXiv:2309.10142, 68 pages. J. Carruth, M. Eggl, C. Fefferman, C. Rowley. <i>Optimal Agnostic Control of Unknown Linear Dynamics in a Bounded Parameter Range</i> , arXiv: 2309.10138, 108 pages. J. Carruth, A. Frei-Pearson, A. Israel. <i>The norm of linear extension operators for $C^{m-1,1}(\mathbb{R}^n)$</i> , Adv. Math. 410 (2022), Part A, 95 pages. J. Carruth, M. Eggl, C. Fefferman, C. Rowley, M. Weber. <i>Controlling unknown linear dynamics with bounded multiplicative regret</i> , Rev. Mat. Iberoam. 38 (2022), no. 7, 2185-2216. J. Carruth, A. Frei-Pearson, A. Israel, B. Klartag. <i>A coordinate-free proof of the finiteness principle for Whitney's extension problem</i> , Rev. Mat. Iberoam. 36 (2020), no. 7, 1917-1956. J. Carruth, N. Elkies, F. Goncalves, M. Kelly. <i>The Beurling-Selberg Box Minorant Problem via Linear-Programming Bounds</i> , arXiv: 1702.04579. J. Carruth, M. Tygert, R. Ward. <i>A comparison of the discrete Kolmogorov-Smirnov statistic and the Euclidean distance</i> , arXiv: 1206.6367.	
TALKS	CUNY Harmonic Analysis and PDE Seminar. (2023) Geometry, Topology, and Control System Design workshop, Banff International Research Station. (2023) Department Colloquium, University of Hawai'i at Mānoa. (2022) 14th Whitney Problems Workshop, virtual. (2021) SIAM Conference on Applications of Dynamical Systems, virtual. (2021) New Faculty Talks, Princeton University. (2019)	

Analysis Seminar, The University of Texas at Austin. (2019)
 INFORMS Annual Meeting, Phoenix, AZ. (2018)
 Colloquium, Center for Communications Research, Princeton, NJ. (2017)

OTHER CONFERENCES 15th Whitney Problems Workshop, virtual. (2023)
 Poster, Foundations of Computational Mathematics, University of Barcelona, Spain. (2017)
 Poster, The Beurling-Selberg Box Minorant Problem, Sampling Theory and Applications 12th International Conference, Tallinn, Estonia. (2017)

TEACHING EXPERIENCE

Spring	2022	Co-instructor, Introduction to Mathematics (TPEI)
Fall	2021	Co-instructor with C. Fefferman, Graduate course on Whitney Extension Problems (Princeton)
Fall	2018	Teaching Assistant, From Numbers to Chaos (UT)
Spring	2018	Teaching Assistant, Probability I (UT)
Fall	2017	Teaching Assistant, Differential Equations with Linear Algebra (UT)
Spring	2017	Teaching Assistant, Partial Differential Equations and Applications (UT)
Fall	2016	Teaching Assistant, Multivariable Calculus (UT)
Summer	2016	Teaching Assistant, Linear Algebra (UT)
Spring	2016	Teaching Assistant, Real Analysis I (UT)
Fall	2015	Teaching Assistant, Real Analysis I (UT)
Fall	2015	Teaching Assistant, Differential Calculus (UT)
Spring	2015	Teaching Assistant, Integral Calculus (UT)
Fall	2014	Teaching Assistant, Differential Calculus (UT)
Fall	2013	Teaching Assistant, Differential Calculus (UT)

PROFESSIONAL SERVICE Referee for journals:

- Revista Matemática Iberoamericana
- International Mathematics Research Notices

OTHER SERVICE Volunteered with Texas Prison Education Initiative (TPEI) in Spring 2022. Co-instructor of Introduction to Mathematics course at Lockhart Correctional Facility.

CITIZENSHIP U.S. and Luxembourg