

Jared Marx-Kuo

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EMPLOYMENT	NSF Postdoc , University of Chicago Math Department	2026 – Present
	Postdoctoral Visitor , Center for Mathematical Modeling, Chile	June 2026
	NSF Postdoc , Rice University Math Department	2025 – 2026
	Griffith Conrad Evans Instructor , Rice University Math Department	2024 – 2025
EDUCATION	PhD in Mathematics , Stanford University	2019 – 2024
AWARDS	NSF Mathematical Sciences Postdoctoral Research Fellowship , National Science Foundation	2025 – 2028
	Rice Academy of Fellows , Rice University	2025 – 2026
	• Received \$2,000 professional development grant	
	Rice Creative Ventures Fund Grant , Rice University	October 2025
	• Received \$10,000 to host a conference on geometry and dynamics in April 2026	
	• Joint with David Fisher, Francisco Arana-Herrera, Christos Mantoulidis	
	US Junior Oberwolfach Fellow 2025 , MFO	July 2025
	• Received \$1000 to attend Oberwolfach workshop <i>Differentialgeometrie im Großen 2025</i>	
	Stanford CTL LIT Fellow , Stanford Center for Teaching and Learning	2023
	• \$2000 grant to develop TA handbook + workshops addressing: active learning, instructor talk, and identity in the classroom	
	• Joint with Alexandra Stavrianidi	
	NSF Graduate Research Fellow , National Science Foundation	2021
	• Full Funding for 3 years of PhD	
	Stanford Graduate Fellowship in Science & Engineering , Stanford University	2019
	• Full Funding for 3 years of PhD	
PUBLICATIONS AND PREPRINTS	The p-widths of the Hemisphere (2026, Submitted)	
	Mountain Pass Critical Points of the Volume Constrained Area Functional (Joint with Gregory R. Chambers) (In Revision)	
	Almgren’s Three-Legged Starfish (Joint with Christos Mantoulidis) (2025, Submitted)	
	“Infinitely Many Surfaces with Prescribed Mean Curvature in the Presence of a Strictly Stable Minimal Surface” (Joint with Pedro Gaspar) (2025, Submitted)	
	“The p-widths of $\mathbb{R}P^2$” Proceedings of the AMS , Vol 153, No. 12 (2025) 5385 – 5396	
	“Diameter, Area, and Mean Curvature” (Joint with Gregory Chambers) Differential Geometry and its Applications , Vol 103 (2026)	
	“Index, Intersections, and Multiplicity of Min-Max Geodesics” (Joint with Lorenzo Sarnataro, Douglas Stryker) (In Revision)	
	“The Isospectral Problem for p-widths: An Application of Zoll metrics” Comptes Rendus Mathématique , Vol 363 (2025), 565 – 570	

“An Inverse Problem for Renormalized Area/Entanglement Entropy”
New Zealand Journal of Mathematics, Vol 56 (2025) 69 – 124
 (Video on this paper from BIRS 2024)

“Second Inner Variations, Stress-Energy Tensors, and Index of Limiting Varifolds”
Journal of Geometric Analysis Vol 35, No. 290 (2025)

“Geometric Variations of an Allen–Cahn Energy on Hypersurfaces” (Joint with Èrico Melo Silva)
Calculus of Variations and Partial Differential Equations, Vol 64, No. 180 (2025)

“A Dirichlet-to-Neumann Map for the Allen-Cahn Equation on Manifolds with Boundary”
Interfaces and Free Boundaries, Vol 27, No. 4 (2025) 575 – 618

“Variations of Renormalized Volume for Minimal Submanifolds of Poincare-Einstein Manifolds”
Communications in Analysis and Geometry, Vol 33, No. 1 (2025) 17 – 29

“Sandpile Groups of Cayley Graphs of \mathbb{F}_2^N ” (Joint with Jiyang Gao, Vaughan McDonald, Chi Ho Yuen)
Communications in Algebra, Vol 52, No. 10 (2024), 4459 – 4479

“Characters of Renner Monoids and Their Hecke Algebras”
International Journal of Algebra and Computation, Vol 30, No. 7 (2020), 1505 – 1535

“Convolution Algebras for Finite Reductive Monoids” (Joint with Vaughan McDonald, John M. O’Brien, Alexander Vetter)

TEACHING

Math 355, Instructor, *Linear Algebra*, Rice Jan 2025 – April 2025

Math 354, Instructor, *Honors Linear Algebra*, Rice Sept 2024 – Dec 2024

Math 53 TA, *Ordinary Differential Equations with Linear Algebra*, Stanford March 2023 – June 2023

LSP Math Instructor, Leland Scholars program, Stanford August 2021

- Instructor for course on high school level mathematics for incoming FGLI freshmen
- Gave welcome talk, “*Mathematics and Society*”

Math 62CM TA, *Modern Mathematics: Continuous Methods*, Stanford January 2021 – March 2021

Math 171 CA, *Fundamental Concepts of Analysis*, Stanford September 2020 – November 2020

SUMAC TA, Stanford University Mathematics Camp, Stanford June 2020 – August 2020

- Teaching Assistant for summer course in algebraic topology
- Gave talk, “*Math, Science, and Society*”

TALKS

PUC Geometry Seminar, Pontificia Universidad Catolica de Chile June 2026

IMPA Geometry Seminar, Instituto Nacional de Matematica Pura e Aplicada June 2026

CMM Analysis and PDE Seminar, Center for Mathematical Modeling (Santiago, Chile) June 2026

UTD Colloquium, University of Texas Dallas March 2026

Toronto Geometry Seminar, University of Toronto March 2026

Cal Tech Geometry Seminar, California Institute of Technology February 2026

UC Irvine Geometry Seminar, University of California Irvine February 2026

Yale Geometry Seminar, Yale University February 2026

BIP Inverse Problems Online Seminar, (Hosted by Sebastian Munoz-Thon) October 2025

UPenn Geometry Seminar, University of Pennsylvania October 2025

Lehigh University Geometry Seminar, Lehigh University October 2025

Rice University Undergraduate Colloquium, Rice University October 2025

Johns Hopkins University Geometry Seminar, Johns Hopkins University September 2025

Rutgers University Geometry Seminar, Rutgers University September 2025

Cornell University Geometry Seminar, Cornell University September 2025

Oberwolfach Differentialgeometrie im Großen, MFO July 2025

UC Santa Barbara Geometry Seminar, University of Santa Barbara California May 2025

UC Santa Cruz Geometry and Analysis Seminar, University of Santa Cruz California May 2025

Weyl Laws Across Mathematics, Brin Mathematics Research Center May 2025

UTK Geometry Seminar, University of Tennessee Knoxville March 2025

Conformal and CR Geometry Workshop, BIRS (Video) December 2024

Rice Geometry Seminar, Rice University September 2024

Cornell Geometry Seminar , Cornell University	<i>April 2024</i>
Syracuse Geometry Seminar , Syracuse University	<i>April 2024</i>
UChicago Geometry Seminar , University of Chicago	<i>April 2024</i>
Northwestern University Analysis Seminar , Northwestern University	<i>March 2024</i>
Calculus of Variations and Geometric Measure Theory Seminar , University of Pisa (Zoom)	<i>March 2024</i>
UC Davis Geometry Seminar , University of California Davis	<i>December 2023</i>
Rice Geometry Seminar , Rice University	<i>September 2023</i>
Early Career Seminar on Inverse Problems, PDEs, Microlocal Analysis, Differential Geometry , University of Washington	<i>March 2023</i>
UC Santa Cruz Geometry Seminar , University of California Santa Cruz	<i>November 2022</i>
UC Davis Geometry Seminar , University of California Davis	<i>October 2022</i>
UMD Geometry Seminar , University of Maryland College Park	<i>September 2022</i>
Stanford Geometry Seminar , Stanford University	<i>September 2022</i>
Conformal Geometry, Analysis, and Physics Conference in Honor of Robin Graham , University of Washington (Young researcher poster session)	<i>June 2022</i>

OUTREACH AND SERVICE	Referee service	(Periodic)
	<ul style="list-style-type: none"> • <i>Inventiones Mathematicae</i> • <i>Journal of Differential Geometry</i> • <i>Transactions of the American Mathematical Society</i> • <i>Selecta Mathematica</i> • <i>Nonlinear Analysis</i> 	
	Rice Summer Undergraduate Research Fellowship (SURF) Mentor Program Website	June-July 2025
	<ul style="list-style-type: none"> • Individual reading with a student in Complex Analysis for 2 months 	
	Oberwolfach Differentialgeometrie im Großen 2025 Reporter MFO	July 2025
	<ul style="list-style-type: none"> • Workshop reporter for "Differentialgeometrie im Großen" 2025 	
	Rice University Geometry Seminar Organizer,	Sept 2024 - Present
	Rice University Math Ed Discussion Seminar,	Dec 2024, Sept 2025
	<ul style="list-style-type: none"> • Presented on <u>Identity and Privilege in the math classroom</u> • Led an interactive workshop discussing scenarios + actionable items using Universal Design for Learning (UDL) • Led a discussion on AI and how it is affecting homework and teaching in math classes 	
	Rice University Directed Reading Program Mentor, Program Website	September 2024 - Present
	Stanford TA Workshop, Program Website	Sept 2023 - June 2024
	<ul style="list-style-type: none"> • Organized workshops on <u>Active Learning</u>, <u>Instructor Talk</u>, and <u>Identity in the Classroom</u>, to help TAs improve their teaching and student interactions • Sponsored by the Stanford CTL LIT Fellowship (see Awards) 	
	Stanford Directed Reading Program Mentor, Program Website	September 2019 - June 2024
	Stanford Directed Reading Program Organizer, Program Website	January 2020 - June 2024
	<ul style="list-style-type: none"> • Organized program and paired undergraduates with math graduate students for quarter-long, 1-on-1 reading projects • Advertise the program, schedule presentations, submit budget updates, etc. 	
	President of Stanford Graduate Math Outreach Organization (SGMOO),	May 2022 - June 2024
	<ul style="list-style-type: none"> • Organizer for outreach programs run by math graduate students, including: Directed Reading Program (DRP), Stanford Women in Math Mentoring Program (SWIMM) 	
	Stanford First-Year Mentoring Program Mentor + Organizer,	September 2020 - June 2023
	<ul style="list-style-type: none"> • Paired older graduate students in math department with first year PhD students to facilitate bonding, research connections, and to provide PhD advice • Participated as mentee in 2019, as mentor in 2020-2023 	
	TA Mentor for First-time TAs	2022-2023
	<ul style="list-style-type: none"> • Mentored new TAs - observed their section teaching and provided feedback • Compensated role 	

- President of Stanford Math Graduate Students** September 2020 - September 2022
- Organized graduate student roles to develop a sense of community within the department
- SUMAC Application Reader, Program Website** March 2021 - April 2021
- Read applications for Stanford University Mathematics Camp
 - Advocated for underrepresented and underresourced students in the application process
- SURIM Mentor, Stanford Undergraduate Research Institute in Mathematics** June 2020 – August 2020
- Mentored undergraduates in PDEs with applications to the Allen-Cahn Equation
- SURA Mentor, Program Website** January 2020 - April 2020
- Mentored undergraduates in math by advising them on courses and summer projects
- FLI Community Mentor, Program Website** January 2020 - November 2020
- Supported low income undergraduate student with navigating college life and adjusting plans for Covid-19 pandemic

REFERENCES

Otis Chodosh, Professor, Department of Mathematics, Stanford University,
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Christos Mantoulidis, Assistant Professor, Department of Mathematics, Rice University,
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