

Jared Marx-Kuo

Sloan Building 381-F, Stanford, CA, 94305

jmarxkuo@stanford.edu <http://stanford.edu/~jmarxkuo/>

EMPLOYMENT AND EDUCATION	Griffith Conrad Evans Instructor , Rice University Math Department (Starting July 2024)	2024 – 2027
	PhD Student , Stanford University Math Department Expected June 2024	2019 – Present
	Bachelor of Arts in Mathematics with Honors , University of Chicago Cumulative GPA: 3.966	2019
AWARDS	Stanford CTL LIT Fellow , Stanford Center for Teaching and Learning <ul style="list-style-type: none">• \$2000 grant to develop TA handbook + workshops addressing: active learning, instructor talk, and identity in the classroom• Joint with Alexandra Stavrianidi	2023
	NSF Graduate Research Fellow , National Science Foundation <ul style="list-style-type: none">• Full Funding for 3 years of PhD	2021
	Stanford Graduate Fellowship in Science & Engineering , Stanford University <ul style="list-style-type: none">• Full Funding for 3 years of PhD	2019
	Paul R. Cohen Memorial Prize , University of Chicago <ul style="list-style-type: none">• “Awarded to the graduating seniors who have achieved the highest academic record in the field of mathematics”	2019
PUBLICATIONS AND PREPRINTS	“An Inverse Problem for Renormalized Area/Entanglement Entropy” (2024, Submitted)	
	“Second Inner Variations of Energy and Index of Codimension 2 Minimal Submanifolds” (2023, Submitted)	
	“Geometric Variations of an Allen–Cahn Energy on Hypersurfaces” (Joint with Èrico Melo Silva) (2023, Submitted)	
	“A Dirichlet-to-Neumann Map for the Allen-Cahn Equation on Manifolds with Boundary” (2023, Submitted)	
	“Variations of Renormalized Volume for Minimal Submanifolds of Poincare-Einstein Manifolds” (2022, To Appear in <i>Communications in Analysis and Geometry</i>)	
	“Characters of Renner Monoids and Their Hecke Algebras” (IJAC, 2020)	
	“Sandpile Groups of Cayley Graphs of \mathbb{F}_2^N ” (Accepted at Communications in Algebra, 2024)	
	“Convolution Algebras for Finite Reductive Monoids”	
TEACHING	Math 53 TA , <i>Ordinary Differential Equations with Linear Algebra</i>	March 2023 – June 2023
	LSP Math Instructor , Leland Scholars program <ul style="list-style-type: none">• Instructor for course on high school level mathematics for incoming FGLI freshmen• Gave welcome talk, “<i>Mathematics and Society</i>”	August 2021
	Math 62CM TA , <i>Modern Mathematics: Continuous Methods</i>	January 2021 – March 2021
	Math 171 CA , <i>Fundamental Concepts of Analysis</i>	September 2020 – November 2020
	SUMAC TA , Stanford University Mathematics Camp <ul style="list-style-type: none">• Teaching Assistant for summer course in algebraic topology• Gave talk, “<i>Math, Science, and Society</i>”	June 2020 – August 2020
	CAAP TA , Chicago Academic Achievement Program <ul style="list-style-type: none">• Teaching assistant for introduction to proofs via calculus	June 2019 – August 2019

TALKS

AMS 2024 Fall Western Sectional Meeting, UC Riverside

- *TBD*
(October 2024)

Cornell Geometry Seminar, Cornell University

- *An Inverse Problem for Renormalized Area*
(April 2024)

Syracuse Geometry Seminar, Syracuse University

- *An Inverse Problem for Renormalized Area*
(April 2024)

UChicago Geometry Seminar, University of Chicago

- *An Inverse Problem for Renormalized Area*
(April 2024)

Northwestern University Analysis Seminar, Northwestern University

- *An Inverse Problem for Renormalized Area*
(March 2024)

Calculus of Variations and Geometric Measure Theory Seminar, University of Pisa (Zoom)

- *Geometric Variations of an Allen–Cahn energy on hypersurfaces*
(March 2024)

UC Davis Geometry Seminar, University of California Davis

- *An Inverse Problem for Renormalized Area/Entanglement Entropy*
(December 2023)

Rice Geometry Seminar, Rice University

- *Geometric Variations of an Allen-Cahn Energy on Hypersurfaces*
(September 2023)

Early Career Seminar on Inverse Problems, PDEs, Microlocal Analysis, Differential Geometry, University of Washington

- *Variations of Renormalized Volume for Minimal Submanifolds of Poincare-Einstein Spaces*
(March 2023)

UC Santa Cruz Geometry Seminar, University of California Santa Cruz

- *Variations of Renormalized Volume for Minimal Submanifolds of Poincare-Einstein Spaces*
(November 2022)

UC Davis Geometry Seminar, University of California Davis

- *Variations of Renormalized Volume for Minimal Submanifolds of Poincare-Einstein Spaces*
(October 2022)

UMD Geometry Seminar, University of Maryland College Park

- *Introduction to Renormalized Volume + Variations for Minimal Submanifolds of Poincare-Einstein Spaces*
(September 2022)

Stanford Geometry Seminar, Stanford University

- *Variations of Renormalized Volume for Minimal Submanifolds of Poincare-Einstein Spaces*
(September 2022)

Conformal Geometry, Analysis, and Physics Conference in Honor of Robin Graham, University of Washington

- *Variations of Renormalized Volume for Minimal Submanifolds of Asymptotically Hyperbolic Spaces*
(June 2022)
- Young researcher poster session

OUTREACH AND
SERVICE**Referee**

(periodic)

- Transactions of the American Mathematical Society

Stanford Directed Reading Program Mentor, [Program Website](#)

September 2019 - Present

Stanford Directed Reading Program Organizer, [Program Website](#)

January 2020 - Present

- 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 - Present
<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 - Present
<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-Present 	
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
<ul style="list-style-type: none"> • Organized graduate student roles to develop a sense of community within the department 	
SUMAC Application Reader, Program Website	March 2021 - April 2021
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • Mentored undergraduates in PDEs with applications to the Allen-Cahn Equation 	
SURA Mentor, Program Website	January 2020 - April 2020
<ul style="list-style-type: none"> • Mentored undergraduates in math by advising them on courses and summer projects 	
FLI Community Mentor, Program Website	January 2020 - November 2020
<ul style="list-style-type: none"> • Supported low income undergraduate student with navigating college life and adjusting plans for Covid-19 pandemic 	
CAAP RA, Chicago Academic Achievement Program	June 2019 – August 2019
<ul style="list-style-type: none"> • Resident Assistant for bridge program for first-gen, low income, immigrant students attending the University of Chicago 	

CONFERENCES
AND SUMMER
SCHOOLS
ATTENDED

Geometric Flows and Relativity Punta Del Este	March 2024
2024 The Fifth Taiwan International Conference on Geometry National Taiwanese University	January 2024
Joint Japan/US Collaborative Workshop on Geometric Analysis Stanford University	August 2023
37th Geometry Festival Princeton University	April/May 2023
Critical Issues in Mathematics Education 2023: Mentoring for Equity MSRI	March 2023
Geometric Applications of Microlocal Analysis, Celebrating Rafe Mazzeo Stanford University	September 2022
Conformal Geometry, Analysis, and Physics Conference in Honor of Robin Graham University of Washington	June 2022
Rutgers Geometric Analysis Conference Rutgers University	May 2022
Deformations of Geometric Structures in Current Mathematics: Celebration of the works of Masatake Kuranishi Columbia University	May 2022
BIRS New Directions in Geometric Flows 2021 Virtual Conference in Geometric Analysis	Fall 2021
Seminaire de Mathematiques Superieures 2021, MSRI Summer school in Microlocal Analysis	Summer 2021
Young Mathematicians Conference, Conference for undergraduates in math	Summer 2018
University of Chicago Summer School in Analysis, Program Website	Summer 2016

REFERENCES

Otis Chodosh, Professor, Department of Mathematics, Stanford, ochodosh@stanford.edu
Rafe Mazzeo, Professor, Department of Mathematics, Stanford, rmazzeo@stanford.edu