

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 classroomJoint with Alexandra Stavriani	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)	
	“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, Submitted)	
	“Characters of Renner Monoids and Their Hecke Algebras” (IJAC, 2020)	
	“Sandpile Groups of Cayley Graphs of \mathbb{F}_2^N ” (Submitted, 2022)	
	“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 freshmenGave 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 topologyGave 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

Cornell Geometry Seminar, Cornell University

- *Second Inner Variations of Energy and Index of Codimension 2 Minimal Submanifolds*
((Pending) April 2024)

Syracuse Geometry Seminar, Syracuse University

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

UChicago Geometry Seminar, University of Chicago

- *Second Inner Variations of Energy and Index of Codimension 2 Minimal Submanifolds*
((Pending) April 2024)

Northwestern University Analysis Seminar, Northwestern University

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

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

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

UC Davis Geometry Seminar, University of California Davis

- *Title TBD*
((Pending) 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

- 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
- 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
- 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
- CAAP RA, Chicago Academic Achievement Program** June 2019 – August 2019
- 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

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