

ZACHARY B. SMITH

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EDUCATION

University of California, Los Angeles, Los Angeles, CA

PhD in Mathematics, September 2017—present (expected June 2024)

Advisor: Mario Bonk

MA in Mathematics awarded June 2019

University of Chicago, Chicago, IL

BS in Mathematics with Honors, September 2013—June 2017

AWARDS

Liggett Fellow Teaching Award, June 2023

Recognizing excellence in teaching in the UCLA Math Department

RESEARCH

Research Interests

Complex dynamics, Teichmüller theory, Fuchsian groups, and classical complex analysis

Publications and Preprints

Curve Attractors for Marked Rational Maps (in preparation)

Draft available at math.ucla.edu/~zbsmith/papers/fourmarked.pdf

Polymorphic Maps and Thurston Theory (PhD Thesis; in preparation)

Draft available upon request

TEACHING

Instructor of Record (UCLA)

132 *Complex Analysis for Applications* – Summer 2022, Fall 2022, Winter 2023

Teaching Assistant (UCLA)

Upper-division Math Courses

106 *History of Mathematics* – Winter 2020

120A *Differential Geometry* – Spring 2021, Winter 2021

131A *Analysis I* – Summer 2021 ($\times 2$), Winter 2022, Spring 2022

131B *Analysis II* – Spring 2020

132 *Complex Analysis for Applications* – Winter 2020, Summer 2020, Fall 2020,
Winter 2022, Spring 2022

134 *Linear and Nonlinear Systems of Differential Equations* – Spring 2023

Lower-division Math Courses

3C *Ordinary Differential Equations with Linear Algebra for Life Sciences* – Fall 2017, Winter 2018, Fall 2018, Fall 2019

31B *Integration and Infinite Series* – Spring 2018

32A *Calculus of Several Variables* – Fall 2018, Spring 2019, Fall 2020

32B *Calculus of Several Variables* – Fall 2019, Spring 2021

33A *Linear Algebra and Applications* – Winter 2021

33B *Differential Equations* – Winter 2019 ($\times 2$), Spring 2019

SERVICE AND OUTREACH

Directed Reading Program (DRP) Mentor, Voluntary January 2022—present
UCLA Mathematics DRP program pairs undergraduates with graduate students for quarter-long independent study projects (see math.ucla.edu/~drp/)

Mentored five students across nine distinct projects, including but not limited to: winding numbers and the Jordan curve theorem, measure theory, functional analysis, complex dynamics, Fuchsian groups, differential topology, and calculus of variations

CEED Summer Bridge Lead Instructor, September 2022 and September 2023
Summer program organized by the Center for Excellence in Engineering and Diversity (see ceed.ucla.edu)

Taught intensive two-week/20-hour classes on multivariable calculus for underrepresented minority and first-generation college students entering their first year

Olga Radko Math Circle Assistant Instructor, Voluntary April 2023—present
Outreach program for advanced high school students (see circles.math.ucla.edu)
Lead students through weekly 2-hour worksheet sessions on off-curriculum topics, such as projective geometry, nonstandard analysis, and game theory

UCLA Math Graduate Bootcamp Assistant, Voluntary August 2023
Summer program to prepare entering math PhD students for the basic qualifying entrance exam

VOLUNTARY COMMITTEE SERVICE

DRP Committee, April 2023—present
Organizing committee for the graduate student-led DRP program

Mathematics Undergraduate Studies Committee, April 2023—present
Graduate student representative on department committee for evaluation and implementation of curricular changes

Mathematics Teaching Committee, September 2023—present
Graduate student representative on department committee promoting and advising teaching initiatives

TALKS

The Moduli Space Correspondence of Thurston Theory

Peking University Conformal Dynamics and Groups Seminar, November 2023

Curve Attractors for Marked Rational Maps

Pacific Quasiworld Seminar, November 2023

The Thurston Pullback Map and Rational Slopes

AMS Spring Eastern Sectional Meeting, April 2023

The Thurston Pullback Map

Quasiworld Seminar, October 2022

Thurston Maps and the Curve Attractor Problem

UCLA ATC Talk, October 2021

ECH Capacities and Ellipsoid Embeddings

UCLA Topology Seminar, November 2020

Overtwisted Classification in Dimension 3

UCLA Topology Seminar, April 2020

CONFERENCES AND WORKSHOPS

Quasiworld Workshop

University of Helsinki, August 2023

Special Session on Quasiconformal Analysis and Geometry on Metric Spaces

AMS Spring Eastern Sectional Meeting, April 2023

The Circle at Infinity: An International Colloquium in Honor of Curtis T. McMullen

Harvard University, June 2022

Adventurous Berkeley Complex Dynamics

Mathematical Sciences Research Institute, May 2022

Complex Dynamics: from special families to natural generalizations in one and several variables

Mathematical Sciences Research Institute, February 2022

Summer Graduate School in Random Conformal Geometry

Mathematical Sciences Research Institute, July 2021

RTG Summer School in Analysis

University of Chicago, June 2015 and June 2016

OTHER SKILLS

HTML, CSS, LaTeX, Python, Sage, C++