Taylor McAdam

Contact Information	Department of Mathematics University of California, San Diego 9500 Gilman Drive # 0112 La Jolla, CA 92093-0112	tmcadam@ucsd.edu www.math.ucsd.edu/~tmcadam Citizenship: USA

Research Interests

Homogeneous dynamics with applications to number theory and geometry; math education and diversity in higher education

Education

University of California, San Diego, La Jolla, CA

Ph.D. in Mathematics (Expected June 2019)

Advisor: Amir Mohammadi

University of Texas at Austin, Austin, TX

M.A. in Mathematics, August 2017

Advisor: Amir Mohammadi
Advanced to candidacy October 2016

Harvey Mudd College, Claremont, CA

B.S. in Mathematics, May 2013

Graduated with high distinction, honors in mathematics, and honors in humanities, social sciences, and the arts

Publications

M. Luethi and T. McAdam, *Prime and almost-prime times in horospherical flows*, (In Preparation).

T. McAdam, *Almost-primes in horospherical flows on the space of lattices*, arXiv preprint 1802.08764 (2018), (Submitted).

J. Jacobsen and T. McAdam, *A boundary value problem for integrodifference population models with cyclic kernels*, Discrete Continuous Dyn. Syst. Ser. B, **19** (2014), no. 10, 3191–3207.

Honors and Awards

2019–2022	**NSF Postdoctoral Research Fellowship** Awarded to conduct postdoctoral research at Yale University with sponsoring scientist Hee Oh, beginning July 1, 2019
Spring 2019	**Powell Dissertation Fellowship** Awarded by the UCSD Math Department to support doctoral students in their final academic quarter of graduate study
Spring 2018, Summer 2018	**RTG Fellowship (University of California, San Diego)** Supported through an NSF Research Training Grant for research in algebra, algebraic geometry, and number theory
Summer 2016, Summer 2017	**RTG Fellowship (University of Texas at Austin)** Supported through an NSF Research Training Grant for research in geometry and topology

Fall 2014	**Frank Gerth III Graduate Excellence Award**
	Awarded by the UT Austin Math Department for outstanding performance on preliminary exams
Spring 2013	**Chavin Prize**
	Awarded by the Harvey Mudd College Math Department for outstanding senior thesis in mathematics
Spring 2011	**Courtney S. Coleman Award**
	Awarded by the Harvey Mudd College Math Department for achievement in mathematics

TALKS AND
PRESENTATIONS

Almost-prime times in horospherical flows, Wasatch Topology Conference, Midway, UT (Ausgust 2019).

Almost-prime times in horospherical flows, Number Theory Seminar, University of Wisconsin-Madison (April 2019).

Almost-prime times in horospherical flows, Number Theory Seminar, Rutgers University (January 2019).

Almost-prime times in horospherical flows, Group Actions and Dynamics Seminar, Yale University (October 2018).

Effective equidistribution in homogeneous dynamics, Graduate Student Workshop in Algebra, Number Theory, and Algebraic Geometry VIII, University of California, San Diego (March 2018).

Flows at almost-prime times on the space of lattices, Number Theory Seminar, University of California, San Diego (March 2018).

Effective equidistribution of horospherical flows on the space of unimodular lattices (candidacy talk), University of Texas at Austin (October 2016).

Birkhoff's theorem for more general group actions, Junior Dynamics Seminar, University of Texas at Austin (December 2015).

Time-dependent integrodifference population models, Junior Analysis Seminar, University of Texas at Austin (November 2013).

Analysis of time-dependent integrodifference population models (poster and talk), Presentation Days, Harvey Mudd College (May 2013).

Integrodifference population models for time-varying river habitats (poster), MAA Undergraduate Student Poster Session, Joint Mathematics Meetings, San Diego (January 2013).

TEACHING
EXPERIENCE

Associate-In (Instructor of Record), University of California, San Diego

Winter 2019	Precalculus (Math 3C)

Teaching Assistant, University of California, San Diego

Fall 2017, Fall 2018	Introduction to Mathematical Reasoning (Math 109)
Winter 2018	Introduction to Cryptography (Math 187A)

Teaching Assistant, University of Texas at Austin

Spring 2017*†	Integral Calculus for Science (M 408S)
Spring 2015,*†	Differential Calculus for Science (M 408N)
Fall 2015,*† Fall 2016*†	
Summer 2015*	Differential Calculus (M s408K)
Fall 2013, Fall 2014	Differential and Integral Calculus (M 408C)
Spring 2014	Sequences, Series, and Multivariable Calculus (M 408D)

Graduate Peer Writing Consultant, University of Texas at Austin

Fall 2016–Spring 2017	Consulted with graduate and professional students from all disciplines on academic and professional writing projects

Academic Excellence Tutor, Harvey Mudd College

Fall 2011–Spring 2013	Tutored underclassmen in calculus, linear algebra, differential equations, and discrete mathematics

Writing Center Consultant, Harvey Mudd College

Fall 2010–Spring 2013	Collaborated with peers to improve technical and nontechnical writing skills

MENTORING EXPERIENCE

First Year Mentor, University of California, San Diego; University of Texas at Austin

Fall 2014, Fall 2015, Fall 2018	Advised incoming first-year graduate students at UCSD and UT Austin on courses, qualifying exams, and the transition to graduate student life

RTG Reading Group, University of California, San Diego

Spring 2018	Mentored a group of four undergraduates in ergodic theory with applications to number theory

Women in Math Mentoring Program, University of Texas at Austin

Fall 2016	Advised a female undergraduate math major on academic and professional issues facing women in math

Directed Reading Program, University of Texas at Austin

Spring 2016	Mentored an undergraduate math major on the topic of dynamical systems through UT Austin's DRP

OUTREACH

ComSciCon-SD, University of California, San Diego

Summer 2018	Selected to participate in a two-day workshop designed to empower graduate students to communicate complex technical concepts to diverse and nonspecialist audiences

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*Indicates a flipped-classroom model.

†Indicates a Supplemental Instruction (SI) position (see Professional Development section).

SMMG Mini Math Camp, University of Texas at Austin

Spring 2016 | Helped organize a free program for primary school students in the Austin area through the Sunday Morning Math Group (SMMG) community outreach program

PROFESSIONAL DEVELOPMENT

Math Education Reading Group, University of California, San Diego

Fall 2018 | Meets weekly with professors and graduate students to discuss selected topics in math education research

CNS Concentration in Teaching and Mentoring, University of Texas at Austin

Fall 2016–Spring 2017 | Passed a series of three semester-long courses offered by the College of Natural Sciences: Intro to Evidence-Based Teaching, Mentored Teaching Experience, and Mentoring Undergraduate Researchers

Supplemental Instruction (SI) Program, University of Texas at Austin

Spring 2015–Spring 2017 | Participated in the SI program for four semesters, in which selected graduate student TAs work with professional learning specialists to improve pedagogy and practice in their classrooms

English-Language Learners (ELL) Certification, University of Texas at Austin

Spring 2017 | Completed certification requirements for a specialization in working with ELL students in the UT writing center

Inclusive Classrooms Leadership Seminar, University of Texas at Austin

Spring 2016 | Attended a training program designed to foster inclusivity, understanding, and diversity within college classrooms

ORGANIZATIONAL ACTIVITIES

Organizer of Entropy Reading Group, University of California, San Diego

Winter 2019–Spring 2019 | Organized a group of graduate students in pursuing independent study of entropy as it pertains to ergodic theory

Co-Organizer of Thin Groups Reading Group, University of Texas at Austin

Spring 2016 | Helped organize a group of graduate students in pursuing independent study of recent developments in thin groups research

Co-Organizer of Junior Dynamics Seminar, University of Texas at Austin

Fall 2015 | Helped found and organize a weekly seminar on dynamical systems for graduate students at UT Austin

OTHER PROFESSIONAL EXPERIENCE

Graphics Consultant, McGraw Hill Higher Education

Summer 2012 | Drafted mathematical graphics for an online calculus textbook by Randy McCarthy and Jon Jacobsen (unpublished)

CONFERENCES ATTENDED	**Summer School on Teichmüller Theory and its Connections to Geometry, Topology and Dynamics**, The Fields Institute, University of Toronto, Canada (August 2018).

Dynamics: Topology and Numbers, Max Planck Institute for Mathematics, Bonn, Germany (July 2018).

The Mathematical Legacy of Maryam Mirzakhani, Stanford University, Stanford, CA (May 2018).

Thin Groups in Number Theory, Geometry and Topology, Rice University, Houston, TX (May 2018).

Workshop on Dynamical Systems and Related Topics, University of Maryland, College Park, MD (April 2018).

New Methods in Zimmer's Conjectures, IPAM, UCLA, Los Angeles, CA (January 2018).

Joint Mathematics Meetings, San Diego, CA (January 2013 and 2018), Seattle, WA (January 2016), and San Antonio, TX (January 2015).

Texas Women in Math Symposium, University of Texas, Austin, TX (November 2016).

School on Algebraic, Geometric, and Probabilistic Aspects of Dynamical Systems and Control Theory, ICTP, Trieste, Italy (July 2016).

Dynamics, Geometry, and Number Theory, Institut Henri Poincaré, Paris, France (June 2016).

Houston Summer School on Dynamical Systems, University of Houston, TX (May 2016).

Thin Groups and SuperApproximation, Institute for Advanced Study, Princeton, NJ (March 2016).

International Conference on Barriers and Enablers to Learning Maths, IMA, University of Glasgow, Scotland (June 2015).

Advances in Homogeneous Dynamics, MSRI, Berkeley, CA (May 2015).

Groups and Dynamics Workshop, University of Texas, Austin, TX (March 2015).

Park City Mathematics Institute Summer Program, PCMI/IAS, Park City, UT (July 2013 and 2012).

COMPUTER SKILLS	Proficient in LaTeX, Python, Mathematica, and Microsoft Office Familiar with Racket, Prolog, Java, Maple, and MATLAB