

THOMAS C. MARTINEZ

tmartinez at math.ucla.edu

EDUCATION

University of California, Los Angeles

PhD, Mathematics · Advisor: Pavel Galashin

2022 -

Los Angeles, California

Harvey Mudd College

BS, Mathematics · High Distinction and Honors in Mathematics

Thesis: *The Slice Rank Polynomial Method* · Advisor: Mohamed Omar

2017 - 2021

Claremont, CA

HONORS/AWARDS

Greever Research Prize – Honorable Mention

2021

- Awarded by the Harvey Mudd College Math Department to a math major who has made an original contribution to the theory of mathematics.

Dorman Student Altruism Prize – Nominee

2021

- Awarded by Harvey Mudd College to graduating seniors recognizing “one who has done the most for his/her fellow students.” The nominations are done by student peers.

Alvin White Prize

2020

- Awarded by the Harvey Mudd College Math Department to students who have greatly contributed to the humanistic side of the HMC Math Department and beyond.

PUBLICATIONS

(with T. Blum, C. Choi, A. Hoey, J. Iskander and K. Lakein). *On Class Numbers, Torsion Subgroups, and Quadratic Twists of Elliptic Curves*. Trans. Amer. Math. Soc. **375**(1), 351-368. 2022.

(with H. V. Chu, D. King, N. Luntzlar, S. J. Miller, L. Shao, C. Sun, and V. Xu). *Generalizing the Distribution of Missing Sums in Sumsets*. The Journal of Number Theory. **239**(10), 402-444. 2022

(with S. J. Miller, C. Mizgerd, J. Murphy, and C. Sun). *Generalizing Zeckendorf’s Theorem to Homogeneous Linear Recurrences, II*. Fibonacci Quarterly. **60**(5), 220-230. 2022.

(with S. J. Miller, C. Mizgerd, and C. Sun). *Generalizing Zeckendorf’s Theorem to Homogeneous Linear Recurrences, I*. Fibonacci Quarterly. **60**(5), 231-254. 2022.

(with F. Beretta, J. Dimino, W. Fang, S. J. Miller, and D. Stoll) *On Benford’s Law and the Coefficients of the Riemann Mapping Function for the Exterior of the Mandelbrot Set*. Fractal and Fractional. **6**(10), 534-552. 2022.

(with A. T. Benjamin and J. Lentfer). *Counting on Euler and Bernoulli Number Identities*. Fibonacci Quarterly. **58**(5), 30-33. 2020.

Papers to Appear

(with T. Jaklitsch, S. J. Miller, S. Mukherjee) *Connections of class numbers to the group structure of generalized Pythagorean triples*. To appear in the Rocky Mountain Journal of Mathematics.

<https://arxiv.org/abs/2112.03663>

Book Reviews

D. King, T. C. Martinez, S. J. Miller, and C. Sun. Review of *Additive Combinatorics: A Menu of Research Problems*, by Béla Bajnok. The American Mathematical Monthly. **126**(10), 955-958. 2019.

MENTORED RESEARCH

Harvey Mudd College Senior Thesis

Extremal Combinatorics

Fall 2020 - Spring 2021

Mentor: Mohammed Omar

University of Virginia REU

Algebraic Number Theory and Algebraic Geometry

Summer 2020

Mentor: Ken Ono

Harvey Mudd College Independent Study

Enumerative Combinatorics

Fall 2019

Mentor: Arthur T. Benjamin

Williams College SMALL REU

Enumerative Combinatorics and Additive Number Theory

Summer 2019

Mentor: Steven J. Miller

CONFERENCES AND TALKS

UCLA Combinatorics Learning Seminar <i>The (Strong and Weak) Bruhat Order</i>	Los Angeles, CA June 2024
UCLA Combinatorics Research Seminar <i>Complex Weighted Tilings and Kasteleyn's Theorem</i>	Los Angeles, CA April 2024
UCLA Combinatorics Learning Seminar <i>Introduction to Root Systems and Reflection Groups</i>	Los Angeles, CA April 2024
UCLA Combinatorics Research Seminar <i>Deograms and Dyck Paths</i>	Los Angeles, CA February 2024
UCLA Combinatorics Research Seminar <i>The Slice Rank Polynomial Method</i>	Los Angeles, CA May 2023
19th International Fibonacci Conference <i>Generalizing Zeckendorf's Theorem to Homogeneous Linear Recurrences</i>	Virtual (via Zoom) July 2020
University of Virginia REU Symposium <i>On Class Numbers, Torsion Subgroups, and Quadratic Twists of Elliptic Curves</i>	Virtual (via Zoom) July 2020
Young Mathematicians Conference Poster: <i>Generalizing the Distribution of Missing Sums in Sumsets</i>	Columbus, OH August 2019
UMass Amherst REU Conference <i>Generalizing the Distribution of Missing Sums in Sumsets</i>	Amherst, MA July 2019

TEACHING

Teaching Assistantships	UC Los Angeles
• Math 32A: Multivariable Differential Calculus [x2]	Fall 2023, Spring 2024
• Math 61: Introduction to Discrete Structures [x5]	Fall 2022 - Fall 2023, Spring 2024
• Math 115A: Linear Algebra	Winter 2024
• Math 33A: Linear Algebra and Applications	Winter 2024
Tutoring	Harvey Mudd College
• "Academic Excellence" Peer Tutor	Fall 2019 - Spring 2021
Proof-based Calculus, Linear Algebra, Differential Equations, Multivariable Calculus, Discrete Mathematics	

CONFERENCE AND SEMINAR ORGANIZATION

• 21st International Fibonacci Conference (Harvey Mudd College – Claremont, CA)	July 2024
• UCLA Combinatorics Learning Seminar (Coxeter Groups)	Spring 2024
• UCLA Combinatorics Research Seminar	Spring 2024
• UCLA Combinatorics Research Seminar	Winter 2024
• 20th International Fibonacci Conference (University of Sarajevo – Sarajevo, Bosnia & Herzegovina)	July 2022
• 19th International Fibonacci Conference (Virtual, via Zoom)	July 2020

LEADERSHIP / OUTREACH

UCLA Directed Reading Program <i>Mentored undergraduate students in reading advanced topics which would not normally be covered in the course of undergraduate education.</i>	UC Los Angeles September 2023 -
• Thomas Slavonia, Spring 2024: Schubert polynomials and pipe dreams	
• Anika Misra, Winter 2024: Graph theory	
• Thomas Slavonia, Winter 2024: Representation theory of the symmetric group	
• Akash Kote, Fall 2023: Probabilistic method in combinatorics	
The Motivational Edge <i>Volunteer Tutor</i>	Allapattah, FL September 2021 - March 2022
• Tutored elementary and middle school students weekly in mathematics, English, and science	
• Provided meaningful insights of the students I worked with to directors to create personalized learning plans	

City Year Miami*Team Leader and Math AmeriCorps Member***Miami Jackson Senior High School**

August 2021 - June 2022

- Led, developed, and managed team of four 21-24-year-old AmeriCorps members serving over 200 9th-10th grade students delivering academic tutoring, behavioral interventions, and whole school initiatives
- Provided attendance, behavior, and academic support in Algebra 1 for 71 9th-10th grade students
- Created and implemented weekly targeted academic and behavioral interventions for 11 students to address critical skill gaps

Number Theory & Benford's Law Research Groups*Assistant Director***Polymath Jr. Program (Virtual)**

June 2021 - August 2021

- Mentored 40 students in conjunction with Professor Steven J. Miller, other graduate students, and post docs
- Organized a weekly seminar series for participants to share progress
- Led to various publications and conference presentations for participants

Associated Students of Harvey Mudd College*West Dorm Co-President***Harvey Mudd College**

April 2018 - April 2019

- Representative of my dorm in the Student Government meetings
- Responsible for leading monthly dorm meetings, along with my Co-Presidents

LANGUAGES**Programming/Markup:**

- \LaTeX · Java · Python · C++

Written/Spoken:

- English (native) · Portuguese (native) · Spanish (fluent) · French (basic)

Last Updated: April 8, 2024