

Latinxs and Hispanics in Mathematical Sciences



Photo courtesy of Alfredo Ramirez

"For me, Hispanic Heritage Month is such an important time to reflect on our culture and the contributions our people have made, are currently making, and will continue to make in this world. It is more important now than ever to be proud and to stand up and fight."

Alfredo Ramirez

PhD Candidate

University of California, Santa Barbara

Alfredo Ramirez was born and raised in California. He grew up in a small farm town called Waterford, with his parents, both from different parts of Jalisco, Mexico, and his three younger siblings. As a native Spanish speaker, he began school with no knowledge of the English language. This is in part what sparked his passion for mathematics—it was the one subject that didn't demand fluency in a language he was still learning. As his mathematical training deepened, it was the universality of the subject that captivated him; it was a language that didn't need translation.

Alfredo earned his undergraduate degree from Fresno Pacific University, studying both history and math. His senior project examined the development of mathematics in the Mayan civilization. He went on to earn a master's degree in mathematics from California Polytechnic State University, San Luis Obispo. He then returned to FPU to work as an adjunct instructor in math and to coordinate a STEM program geared towards helping first-year, first-generation students thrive in their intended areas of study. It was this work that inspired him to continue his own education and pursue a doctoral degree. He is now in his final year of a PhD program at the University of California, Santa Barbara, studying geometric group theory, advised by Jon McCammond.

Alfredo's research sits at the intersection of geometric group theory and algebraic graph theory. He studies Coxeter groups, focusing on which of these groups are hyperbolic, in the sense that they act on a space with hyperbolic (or Lorentzian) signature, and draws on tools from algebraic graph theory to analyze them. As a fellow in the CSU's Chancellor's Doctoral Incentive Program, he collaborates closely with Ryan Blair of CSU Long Beach, co-mentoring an undergraduate research project that bridges Alfredo's work in Coxeter group theory with Ryan's expertise in knot theory.

As a first-generation, queer, Latinx mathematician, Alfredo has rarely seen himself reflected in the field throughout his educational journey. He hopes to inspire future generations of math students to pursue their dreams.

Alfredo brings extensive teaching and mentoring experience to this work. He served as a teaching associate at Cal Poly, San Luis Obispo, and later as an adjunct instructor at Fresno Pacific University, where he also managed the Supplemental Instruction program, mentored several cohorts of first-year students, and directed a STEM program designed to support students through their critical first year of college. As a doctoral student at UC Santa Barbara, he has taught as a TA every quarter and served as a teaching associate for multiple summer courses.

Lathisms was founded in 2016 in order to showcase the contributions of Latinx and Hispanic mathematicians during Hispanic Heritage Month, which is celebrated in the United States from September 15 and October 15 every year. During this time, we feature/reveal a prominent Latinx/Hispanic mathematician daily. See all the featured mathematical scientists at LATHISMS.ORG.

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