

# Latinxs and Hispanics in Mathematical Sciences



## Andrea Arauza Rivera

Born in Guadalajara, Mexico, Andrea Arauza Rivera is the daughter of a proud Mexican family. Andrea spent the first 10 years of her life moving between Mexico, Nevada, and Texas. In Texas, her father acquired legal residency and then citizenship to the United States; through the Immigration and Naturalization Act of 1996, Andrea inherited citizenship when she was 11. As many Mexican-American children do, Andrea struggled to hold on to her heritage while trying to fit into this new world. With every complement from teachers for speaking English without an accent, she learned that to be an academic she needed to check her culture at the door.

After graduating high school, she attended Modesto Junior College before transferring to Cal State Stanislaus. Working the 6:00PM-2:00AM shift at Del Taco allowed Andrea to finance her education without putting an additional burden on her parents. In 2012, Andrea began the Mathematics PhD program at the University of California, Riverside. Andrea is now an Assistant Professor at Cal State East Bay where the department of mathematics works to truly serve the diverse student body of the East Bay.

Andrea's research is in functional analysis and fractal geometry. Consider the connection between geometry and algebra. We study the graph of a parabola by studying the algebraic relationship  $y = x^2$ . This connection extends far beyond basic high school math. There is a well-known duality (in the sense of category theory) between compact Hausdorff topological spaces and commutative unital  $C^*$  algebras. Studying the geometric and topological properties of a space  $X$  turns out to be the same as studying properties of the algebra of continuous functions on  $X$ , namely  $C(X)$ . If you have a problem about topological spaces, you can translate the problem into one about algebras, use the powerful machinery of linear/operator algebra(s) to solve the problem, and then translate the solution back to the land of topological spaces.

Andrea also serves as the Latinx Diversity Fellow at Cal State East Bay. Working closely with the Office of Diversity and the Diversity and Inclusion Student Center, she mentors 5 Latinx students and together they find ways to help themselves and others connect their ethnic identities with their identities as scholars.

*"This month is an opportunity to cherish the many contributions of our gente to mathematics and society. We have always been mathematicians, and now we come together to share and rejoice in our stories. Stories of perseverance, of joy, of triumph in mathematics. Stories that extend beyond our own lives to the lives of our ancestors and our children. We have always been mathematicians and will always be mathematicians."*

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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](http://LATHISMS.ORG).

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