Latinxs and Hispanics in Mathematical Sciences

Ralph R. Gomez

Ralph was born and raised in the Central Valley of California. A profoundly life changing experience happened to Ralph when he was about the age of eight or nine. He would accompany his older sister and mother to the county jail to visit his oldest brother who was incarcerated there. Ralph distinctly remembers witnessing the visible heartbreak on his mother's face during each visit to see his brother. It was during this time that he made the conscious decision to lead a life which was the exact opposite of the kind of life led by his brother. Thus, Ralph stayed out of trouble and embraced education wholeheartedly.

Upon graduating high school, Ralph enrolled at West Hills Community College. After two years there, he transferred to UC Santa Cruz where he earned a BA in mathematics. He stayed there after graduation and earned a master's degree in applied mathematics as well. After teaching at West Hills Community College for a year, Ralph moved to the University of New Mexico where he earned a PhD in mathematics (with distinction) under the supervision of Charles P. Boyer. Ralph finished his degree and accepted a visiting professorship at Swarthmore College in 2008. Ralph is now an associate professor of mathematics and statistics at Swarthmore College.

Ralph's main area of research is understanding geometric structures on manifolds. One strand of his research involves using Sasakian geometry to show the existence of Einstein metrics on certain odd dimensional manifolds. This approach implements tools from algebraic geometry, differential geometry, and topology. The other strand of Ralph's research involves understanding the properties of a new kind of geometric structure called generalized contact geometry. Ralph has always been most attracted to mathematical questions that are inspired from theoretical physics.

Ralph tries to support students in any way that can deepen their mathematical understanding and strengthen their mathematical confidence. In 2019 Ralph taught in Swarthmore College's Teachers as Scholars program, which was a two-day seminar which exposed select K-12 teachers in the surrounding Swarthmore area to exciting ideas in mathematics. Also in the summer of 2020, Ralph will be one of the faculty members participating in Swarthmore Summer Scholar's Program. This summer program sponsored by Swarthmore College selects certain incoming first-year students who are first generation/low income or members of underrepresented groups and interested in STEM, and exposes them to aspects of college life and academics.

"Upon my journey of higher education, there were numerous times when I questioned whether or not being a mathematician was the appropriate path for me. During these times it would have been extremely valuable for me to learn about mathematicians from the Hispanic community and use them as a source of inspiration. To me, Hispanic Heritage Month puts a spotlight on an ever-growing list of mathematicians from the Hispanic and Latinx community that can serve as a beacon for the next generation of mathematicians to come!"