Latinxs and Hispanics in Mathematical Sciences

Photo courtesy of Jordy López García

"For me, Hispanic Heritage Month is an opportunity to reflect, promote, and build upon the success stories of our Hispanic mathematical community."

Dr. Jordy Cheyem López García

Postdoctoral Research Associate
University of Notre Dame

Jordy Cheyem López García was born in Matamoros, Tamaulipas, Mexico, a town bordering Brownsville, Texas, U.S., along the Rio Grande river. For over 10 years, he regularly commuted from Mexico to the U.S. to study. López García obtained a Bachelor of Science and Master of Science in Mathematics, with a minor in Art, from The University of Texas Rio Grande Valley. As a Scorpion Scholar, he received a tuition waiver for his undergraduate degree and partial support for his graduate degree. After graduating from UTRGV, he worked for three years as a lecturer at UTRGV, as well as a mathematics high school teacher at Valley Christian. He continued his education to earn a Ph.D. in Mathematics from Texas A&M University, where he worked with Professor Frank Sottile on applications of algebraic geometry. López García was awarded the Texas A&M Department of Mathematics 2023 Guseman Prize for demonstrating excellence in research, leadership, and service. He is currently a Postdoctoral Research Associate at the University of Notre Dame, where he works with Professor Jonathan Hauenstein to perform research on nonlinear systems.

López García's research is in applications of algebraic geometry. Together with collaborators, he used sheaves and toric varieties to study asymptotic eigenvalue problems arising in the spectral theory of periodic graph operators. Furthermore, with collaborators, he developed two packages in the software system Macaulay2: RealRoots, to explore, count, and locate real solutions to polynomial systems, and A1BrouwerDegrees, to compute A1 Brouwer degrees from A1 homotopy theory. Additionally, together with Natasha Crepeau and Saber Ahmed, he assisted Professors Anne Shiu and Federico Ardila in the Simons Laufer 2022 MSRI UP Program "Algebraic Methods in Mathematical Biology" and aided undergraduate students to study biochemical reaction networks and linear compartmental models. His latest research direction is in numerical algebraic geometry, where, with collaborators, he uses the software Bertini to study parametrized polynomial systems and where he uses pseudo-witness sets to compute complements of real hypersurfaces.

López García is passionate about teaching and mentoring students. At UTRGV, he taught various service courses, and together with Professor Oleg Musin, he advised 9 undergraduate students on their capstone projects in two consecutive long semesters. At Valley Christian High School, he taught a dual enrollment College Algebra class from Texas Southmost College. At Texas A&M, he was awarded the 2022 Houston A&M Mother's Club Outstanding TA Award for his commitment to teaching excellence. He also mentored students in the Texas A&M Directed Reading Program and in the Twoples online directed reading program. Additionally, he taught a first year seminar course for incoming undergraduate mathematics students.