Latinxs and Hispanics in Mathematical Sciences

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"Hispanic Heritage Month reminds me that Puerto Rico is not only where I am from, but why I do this work. After living through hurricanes, I wanted to use mathematics to stay true to who I am, unapologetically authentic and driven, while pushing the field beyond abstraction, creating tools that save lives, honoring the resilience of our islands, and transforming my Caribbean experience into insight that serves the world."

Dr. María Isabel Sánchez-Muñiz

Lecturer
The City College of New York

María I. Sánchez-Muñiz grew up in Toa Alta, Puerto Rico, where the Atlantic Ocean is a constant presence and trade winds and hurricanes mark the rhythm of life. These early experiences shaped her enduring questions about uncertainty and resilience in the face of nature's cycles. María's academic journey began with a B.B.A. in Accounting from the Universidad de Puerto Rico, Recinto de Río Piedras. She later found her intellectual home in mathematics at The City College of New York (CCNY), earning both her B.A. and M.S. in Mathematics. She completed her Ph.D. in Applied Mathematics at the University of Minnesota, Twin Cities, and has returned to CCNY as faculty.

Her research spans dynamical systems, partial differential equations, climate modeling, machine learning, and topological data analysis. She has developed a model of permafrost thaw, studied the recurrent structure of the El Niño–Southern Oscillation, and investigated the onset of the Indian Monsoon. A unifying thread through these projects is her use of mathematics to detect thresholds, cycles, and early warning signals in a warming world. Hurricanes that devastated Puerto Rico profoundly shaped her perspective, inspiring her current work extending persistent homology methods to tropical cyclones to capture the subtle diurnal rhythms governing their evolution and deepen understanding of risks facing Caribbean communities and beyond.

María is equally devoted to teaching, creating classrooms where students feel both challenged and supported. She believes mathematics is best discovered in community: through concretizing abstract concepts, asking questions, making mistakes, and finding patterns together. At CCNY, where she first fell in love with mathematics, she puts this philosophy into practice by designing inclusive courses and research experiences that draw students into the creative process.

Beyond the classroom, María mentors students at all educational stages, with particular focus on those from underrepresented backgrounds. Her philosophy emphasizes sustained support: she continues advising students well beyond individual courses, supervising research projects and guiding graduate school applications. Her contributions have been recognized with the MGB-SIAM Early Career Fellowship, a SIAM Science Policy Fellowship, the University of Minnesota's Outstanding Teaching Award, and the 2025 CCNY Provost's Award for Pedagogical and Curricular Innovation. Driven by her personal journey, she works to expand access and visibility for underrepresented communities in mathematics, ensuring others experience the excitement of discovery that has defined her path.