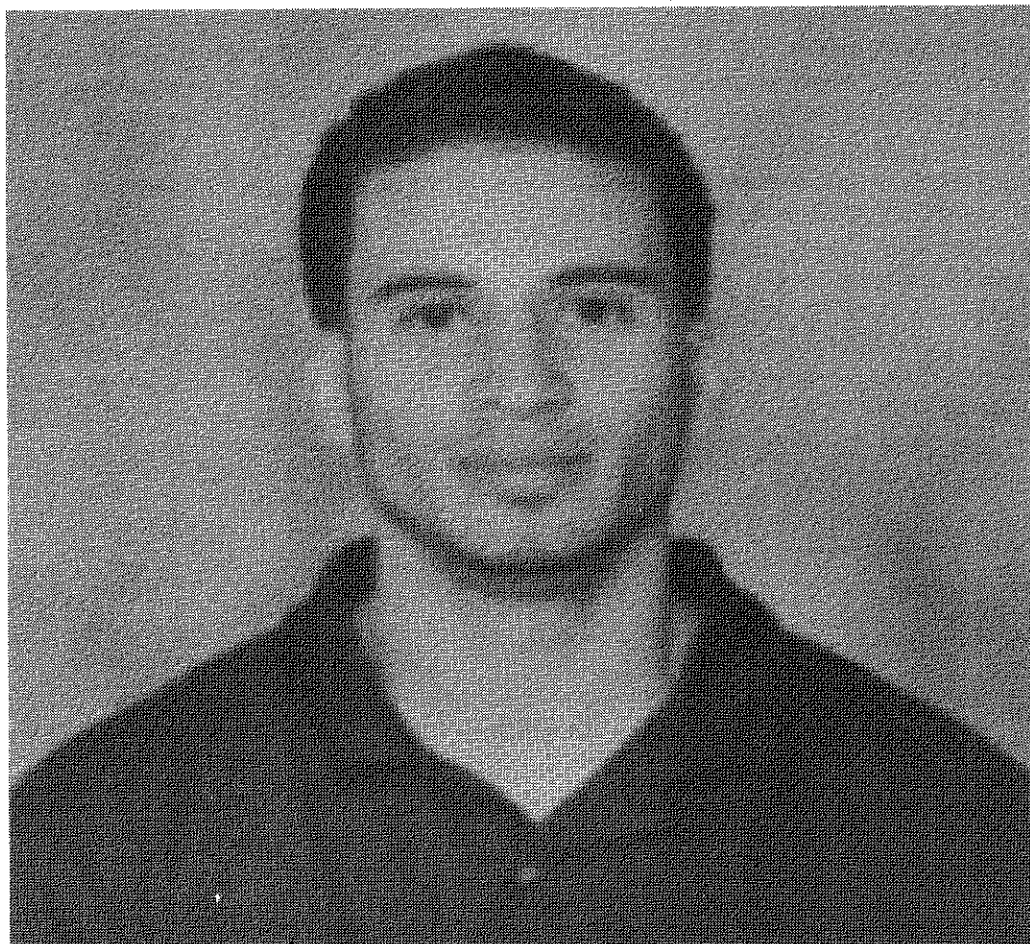


Faculty Profile

Luciano Medina

By RICHARD SCHALL



In 2008, Luciano Medina faced a tough choice. He could continue his career at EJ-Electric as a project manager for exciting projects related to Yankee Stadium and Citi Field or he could accept an offer that Polytechnic gave him to return to the school from which he graduated with a bachelor's degree in electrical engineering, this time as a professor. He took the offer, and now Medina is a professor in the math department, one who is quite popular with his students, who consider him friendly and approachable. "I'm very close to my students," he says, "I've mentored various undergraduate students through the NYU-Poly summer undergraduate research program."

Among the courses he teaches are Calculus 1 and 2, Linear Algebra, and Multivariable Calculus. Does he have a favorite course to teach? Yes, in fact, he does and it's Linear Algebra. Medina says that it's his favorite to teach because

of the difficulty of the course. "It really tests my teaching skills," he noted. "There's an art to teaching and, thank goodness, I believe I have it."

Since coming back to the university, Medina has received his master's degree in mathematics and his Ph.D.

As for his research, Medina has investigated the physical model of the Quantum Hall Effect. This phenomenon, he explained, is the discovery of a voltage that was perpendicular to what was expected, due to strong magnetic fields and low temperatures. Medina's efforts toward the Fractional Quantum Hall Effect (a piece of the larger theory that looks at the electrons in the system) have resulted in an existence and a "uniqueness proof" of this voltage as well as a method of calculating the magnetic flux of the system; it would prove to be a huge step to modeling the effect of this phenomenon, he said.

His research resulted in his Ph.D. thesis in the spring of 2014. His paper, "Vortex

Equations Governing the Fractional Quantum Hall Effect," was submitted to the *Annales Henri Poincaré* journal and is currently being peer-reviewed. Medina has taken it upon himself to add some sort of numerical computation to the theory, but he says he hasn't seen such a method yet.

Medina is very passionate about his work and says that is what led him to the position he is in today. "What interests me most is being able to apply math, to be able to do research in a field that I'm interested in. Math, to me, is like a tool. I get to use it to explore the different fields of science."

Being passionate is something that Medina stresses to anyone looking to find a calling. "If you're very passionate, then you're going to spend time on it; you're going to enjoy it, whether it's difficult or not," he says, "and that will lead you, usually, to success."