



Hagamos con-Ciencia: Eddie López Honorato takes the lab to the children

<https://eddiehonorato.wordpress.com>

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The sun has not risen yet, but Eddie López Honorato is already on his way to school. He can feel the car's wheels tossing and turning as they carry him, his sisters, and his parents away from the bustling metropolis of Mexico City and toward the rural town where Eddie's mother teaches an elementary class. It is an hours-long trip that his family makes every morning. In his mind, Eddie sees himself becoming a successful lawyer, but he does not realize he is already on the road to becoming a scientist.

In his office at the Center for Research and Advanced Studies of the National Polytechnic Institute (Cinvestav) in Saltillo, Mexico, Eddie laughs as he recalls his childhood days. "It was a bit of a strange transition. I knew I could be a good lawyer, but I knew I wasn't going to have any fun."

Today, Eddie is principal investigator of the Energy and Water Research Lab at Cinvestav-Saltillo. His group designs materials for nuclear and renewable energy applications as well as materials for removing arsenic from drinking water.

Despite his shift in career goals, one factor would endure as a mainstay of Eddie's educational career: long-distance travel. After graduating with a BS degree in chemistry from the Universidad Nacional Autónoma de México (UNAM) in 2002, Eddie left his home country to pursue postgraduate degrees in materials science at The University of Manchester in the United Kingdom. He spent two years there as a research associate and one as a fellow at the European Commission in Germany before making the difficult decision to return to Mexico. Eddie recounts that many of his friends and he had left Mexico to pursue opportunities that just were not available in their country at the time or to enjoy comforts they could not find at home.

"A lot of us leave to seek a better life for our family," he says. "For example, my family and I lived in a town near the Rhine in Germany. It was gorgeous—an extremely tranquil lifestyle." But even then, Eddie says, the situation can be complicated, and he admits that despite the comfort and security, it was not always easy living as a family abroad.

During his fellowship in Germany, several job offers afforded Eddie the unique opportunity of choosing to remain in Europe or return to Mexico. Eddie and his wife

came very close to moving to England but ultimately chose to be close to their extended family in Mexico City.

As part of that commitment and because of his career, Eddie has dedicated many of his efforts to improving what he perceives to be a systemic problem in his home country. "In Mexico," Eddie says, "we don't have a culture of science outreach. There are very few schools that have the laboratories or resources to organize such activities." It is a predicament Eddie can well recall living.

His daily trips to the school where his mother taught were a constant reminder that educational resources in rural communities were starkly different from those in the city. A large part of the problem, Eddie says, is that outreach activities are often considered secondary to other scientific duties; they are simply not part of the job. "That's the attitude among many of us researchers—who are the most educated and probably the most qualified to show kids how fantastic science and technology are."

As a researcher at Cinvestav, Eddie is helping combat this problem by organizing outreach events such as *Cinvesniños-Saltillo*, which invites children under 12 to learn about the research problems being tackled at the Center. Eddie and his colleagues are also the recipients of a 2015 Grassroots Grant from the Materials Research Society (MRS) Foundation. The Grassroots initiative helps MRS members launch projects that engage the general public in



Eddie López Honorato of Cinvestav in Saltillo, Mexico.



Cinvesniños-Salttillo materials research outreach event in Mexico.

understanding the importance of materials and materials research. Those funds will help Eddie and other researchers at Cinvestav continue to develop an outreach program they call “Hagamos con-Ciencia (Let’s Make Conscience/with Science).” (As with many cleverly crafted Spanish puns, the wit of the project’s title is lost in translation. It is something like “Let’s Raise Awareness, Let’s Do It through Science”—only with the two phrases read simultaneously.)

As an extension of the Cinvesniños-Salttillo event, “Hagamos con-Ciencia” aims to immerse students from rural and low-income communities in science and technology through hands-on experiments run by researchers and graduate students. In doing so, Eddie hopes to eliminate the obstacle of not being able to visit science museums or research centers like Cinvestav where students can engage with subject matter beyond “seeing it on a sheet of paper”; students can look forward to having the science laboratory come to them.

It takes a lot of work to prepare these demonstrations: weeks of practice, gathering volunteers and materials, transporting them to schools and communities located far away from Saltillo, and repeating experiments several times

a day. It is enough to make you want to “throw everything in the lab afterwards and just go home to sleep,” Eddie admits. But he finds incredible reward in the work that he does.

He relates a story of a woman who rushed her son to the Cinvesniños event in Saltillo from over an hour away in Monterrey last year. The event had not been publicized to areas far outside Saltillo, but had made it on the national news the morning of the event. The woman, Eddie says, took off immediately.

“To me, that’s phenomenal. *That’s* what you call impact.”

It is moments like this that convince Eddie that outreach is crucial to his job as a scientist. Because the truth is, for every parent like the one in his story, there are many more people like the taxi drivers who first dropped him off at the steps of Cinvestav. People who ask, “What is this place? A factory? A school?” People who live right next door and yet know nothing about the national research center.

“What we do doesn’t just show up in a paper or a patent or in doing work for industry,” Eddie says. “We have the opportunity to have a direct impact on society ... to help society mature.”

Eddie has much hope that his outreach efforts can encourage children and adults alike to not only aspire for a better future but to “work and actively seek it.” For that attitude, he is grateful to the constant spring of inspiration in his life: his family. There are his grandmothers, who struggled to provide a good upbringing for their family; his parents, whose patience and tenacity showed him how to find success in the laboratory and outside of it; his wife, whose strong sense of social responsibility he tries to emulate; and his son, whose future is ever-present in his mind.

Now, when Eddie finds himself making trips to schools and rural towns outside of Saltillo, he can feel proud of where his path has taken him, as a scientist, a science communicator, a husband, and a father. “I don’t think I’ll live to see it. But one day, this will be a country we can all be proud of.”

Learn more about Eddie López Honorato’s work and outreach projects on his blog GrInAer-Lab.

This article is reprinted from the Materials Research Society’s Profiles in Materials Science series online: www.mrs.org/science-enthusiasts-profiles.