

The Brain and the Body

By Grizelle González, Soil Scientist

As part of the celebration of the 50th anniversary of the Wilderness Act, the Aldo Leopold Wilderness Institute wanted to establish arts and science residencies in six biomes across the United States that would represent a variety of ecosystems and partner agencies.

El Toro Wilderness in El Yunque National Forest (Luquillo Experimental Forest) is a unique location—representing the first designated Wilderness in Puerto Rico and the first designated tropical wilderness in the National Forest System, so it seemed like a good option. Originally, I wrote the proposal to include El Toro as part of the arts and science collaboration with two main goals in mind: 1) to showcase the significance of the research work being performed at the Forest Service’s International Institute of Tropical Forestry in Río Piedras, Puerto Rico and 2) providing the opportunity to local Puerto Rico artists to collaborate with visiting artists (from mainland United States and Europe) and scientists while living and working in a relatively remote environment. To my surprise, Marianne Ramírez, Executive Director of the Museum of Contemporary Art (MAC) in Santurce, Puerto Rico, wholeheartedly supported the project by recommending the local artists, integrating the participants into the exhibit of “Puerto Rico: Puerta al Paisaje” and together we developed the “Poetic Science” exhibit that presents the artwork that was conceptualized after the experiences and knowledge learned through the Aldo & Leonardo Arts and Science residence in El Toro Wilderness had taken place.

The hands of artist Aline Veillat holding a soil sample from the rainforest.



When the artists and scientists started meeting to share our vision on expectations and goals about the Aldo & Leonardo project, I did not realize how important or how big of an impact this collaboration was going to have on the IITF work environment. But pretty soon after we started going out into the forest and doing research with the artists, we learned the value of getting a fresh look at the things we were doing on a daily basis through different lenses. It is so easy to fall into a routine of visiting permanent study sites and mechanically start taking measurements—particularly if you are doing so over the long term—collecting the same data (whether it is rainfall, air temperature, stream sedimentation, or amount of litter falling from the forest canopy) every week or every month over the span of 10-20 years. Thanks to the artists we were able to recalibrate our senses, which is something that had a great positive impact on all of us (scientists and technicians) at a personal level as well as professionals working in a team environment. It helped improve employee morale not only because the activity per se was out of the ordinary but because external partners (outside of research) showed great appreciation for the constant and meticulous work being done over the long term.

One of the highlights for me in the discussion with the artists was on the use of “tools” for the development of projects in both arts and sciences. Some of the artists explained how they see their body as the main tool to carry on the work ahead of them. As with an artist, to a scientist the brain, other body parts, and senses can also become an essential part of our toolkit. But sometimes scientists get too absorbed in the use of technology, the details of a methodology and the specifics of a particular task—so it was fascinating to learn from the artists how to approach the use of tools differently and more holistically.

Another lesson learned for me from this project is the discovery that an arts and science collaboration is a creative way to teach and show others the work we do as scientists in a non-intimidating way, where the conversation can start with the description of the subtleties of an art expression but can also serve as a template to communicate ecological principles. The enjoyment of an art piece or installation is an ageless activity. Certainly, arts can help scientists communicate scientific terms, ideas, or theories to the general public by reaching and bridging people of all kinds of backgrounds and educational levels.

Project Leader Grizelle González shares ideas and expectations with scientists and artists participating in the Aldo & Leonardo Wilderness Science and Art Collaboration during a dialogue session in the Museum of Contemporary Arts in Santurce, Puerto Rico. Subjects: from left- Jaime and Javier Suarez, Tamara Heartsill Scalley, Aline Veillat, Ariel Lugo, Grizelle Gonzalez, Grant Pound, John Cohrs, Elizabeth Parrilla, Dhara Rivera, Mariane Ramirez.



Grizelle González was born in Santurce, Puerto Rico. She obtained a B.S. degree in biology (1993) and an M.S. in soil ecology (1996) from the University of Puerto Rico, Río Piedras Campus for research on earthworm ecology. At the University of Colorado in Boulder, she obtained a Ph.D. (1999) in soil ecology and biology.

Grizelle started working at the Forest Service's International Institute of Tropical Forestry (IITF) in 2000. She became director of the Sabana Field Research Station in Luquillo in 2006. Currently, she is the project leader of the Research and Development Unit at IITF. She is an adjunct faculty of the Department of Biology and the Department of Environmental Sciences at the University of Puerto Rico, Río Piedras campus. She is the principal investigator of the Luquillo Long-Term Ecological Research Program and the Luquillo Critical Zone Observatory. She is a member of editorial boards of the Caribbean Journal of Science, International Journal of Biodiversity and Conservation, and International Scholarly Research Network-Soil Science, and a Caribbean Naturalist. Grizelle has published many scientific reports, 55 peer reviewed journal articles, 17 book chapters, and nearly 10 scientific opinion columns published by local Puerto Rico newspapers. Her newest book, *Ecological Gradient Analyses in a Tropical Landscape*, was released in 2013.



A scientific installation designed by IITF Project Leader Grizelle González combines scientific tools, field equipment, data sheets, and a climatic station as part of the Poetic Science exhibit at the Museum of Contemporary Arts in Santurce, Puerto Rico. This installation has served as a “laboratory” inside the museum, where the general public and students of all educational backgrounds and levels (from pre-K to college undergraduates) can learn about El Toro Wilderness and the scientific method. Installation photos by Antonio Ramírez Aponte.