

CienciaPR awarded NSF grant to promote science education post-Maria ^[1]

Submitted by [Mónica Ivelisse Feliú-Mójer](#) ^[2] on 12 March 2018 - 12:16pm



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Los participantes de este nuevo proyecto recibirán el innovador microscopio de papel conocido como Foldscope.

SAN JUAN, PR - The non-profit organization Ciencia Puerto Rico (CienciaPR), in collaboration with Yale University, received a grant from the National Science Foundation (NSF) to encourage Puerto Rican students to explore, present, and implement scientific solutions to the challenges created by hurricanes Irma and Maria. The grant, amounting to \$186,086 for one year, was one of 23 granted by the federal agency to do research in Puerto Rico related to the natural disasters, and the only one in the field of education.

The project will train 40 middle school teachers and principals to implement a series of project-based learning (PBL) science lessons that are relevant to Puerto Rican culture. Through the lessons, students will identify how science can address pressing needs in their schools and communities, in relation to the availability of drinking water, and changes to terrestrial ecosystems, among other issues.

The participating schools will receive the lessons developed by CienciaPR, which are aligned with the standards of the Puerto Rico Department of Education (PRDE), as well as the materials necessary to implement them, which include the innovative paper microscope known as Foldscope. They will also receive support to present the results of the projects to their communities and disseminate them through the CienciaPR.org website.

"This project seeks to transform adversity into a positive challenge, an opportunity to learn that empowers students to be agents of change in their communities. We want students to be critical thinkers and problem solvers, a central goal of CienciaPR's new strategic plan ^[3]," said Dr. Giovanna Guerrero-Medina, Executive Director of Ciencia Puerto Rico, and a researcher at Yale University.

Evaluation of educational strategies

CienciaPR will not only train and offer tools to educators, but will be analyzing the feasibility of implementing these socially and culturally relevant PBL lessons to serve the whole student population after a natural disaster. The organization also seeks to evaluate the impact of these lessons on students' learning and attitudes towards science. In Puerto Rico, schools are used as shelters and support centers for communities at risk, which represents additional pressures for the education system during and after an emergency. This in turn affects the restoration of their educational functions. For many children, the trauma of the emergency is combined with the fact that they cannot reach their schools, that they are closed, and their learning is interrupted.

"We want to know if PBL strategies, which helps students learn concepts in a more independent way and through problem-solving, can be an effective tool in the event of a disaster. What we learn from this study can also be of great value in other parts of the world," says Dr. Greetchen Díaz Muñoz, Director of Science Education Programs and Community Partnerships of CienciaPR

A collaborative effort

The project was inspired by a collaboration between CienciaPR and Echar Pa'lante, a multisector group that promotes a better quality of life through education and entrepreneurship. Shortly after Hurricane Maria, CienciaPR participated in a call launched by Echar Pa'lante for the creation of lessons that would help Puerto Rican students continue their learning in the midst of the crisis while addressing the challenges created by the natural disaster at the same time.

CienciaPR is also collaborating with the PRDE and Instituto Nueva Escuela to identify the educators that will participate in the project. Educators whose schools are still affected by lack of power or infrastructural damage, and that serve communities that were highly affected by the recent hurricanes will be chosen.

The organization will also work with the Boys & Girls Club to test the implementation of the lessons in a non-classroom setting. The first workshop will be held at the end of March at the Innovation Center of the Puerto Rico Science, Technology, and Research Trust, as part of the entity's support for the initiative. In addition, CienciaPR will collaborate with the Faculty of Education of the University of Puerto Rico, in Rio Piedras, and a group of science graduate students from different local universities to support workshop participants.

About Ciencia Puerto Rico (CienciaPR)

Ciencia Puerto Rico (CienciaPR, www.cienciapr.org [4]) is a global community of more than 8,500 scientists, students, educators, and allies who believe that science can empower individuals with the knowledge, capacity, and agency to improve their lives and society. The organization leverages our rich and diverse community to democratize science, and transform science education and career training. Since 2006, CienciaPR has successfully engaged and trained scientists, students, and teachers, and created culturally relevant education resources and experiences that improve students attitudes and interests towards science and self-confidence in their science skills. CienciaPR's efforts over the last decade have garnered multiple recognitions, including being named a Bright Spot for Hispanic STEM Education by the White House in 2015 [5].

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