

Peer-reviewed paper highlights impact of our program Seeds of Success ^[1]

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Group of girls in grades 7 to 9 from the San Juan region and participants in the Semillas de Triunfo 2023-2024 program.

Science, technology, engineering and mathematics (STEM) careers are growing at an accelerated pace and pay well. However, Puerto Rican women are still underrepresented in these

fields, especially in engineering, physical and computer sciences.

The "Semillas de Triunfo" (Seeds of Success) program of the organization Ciencia Puerto Rico, offers each school year, a complementary curriculum with the goal of increasing girls' exposure to science, meeting Puerto Rican and Latina scientists who serve as mentors and role models, connecting STEM fields with the culture and context of their communities, and helping girls develop leadership skills and see themselves as capable of being successful in these disciplines.

Over the past eight years (2015-2023), a total of 453 middle and high school girls from the Puerto Rican archipelago have benefited from the program. It is estimated that more than 40,000 people have participated in the girls' multiple activities as school and community leaders and the educational resources produced by the program.

Although the success of "Semillas de Triunfo" has been highlighted in the local media, Ciencia Puerto Rico celebrates a new achievement with the publication of a peer-reviewed article on this initiative in the Journal of STEM Outreach [3]. In it, researchers Liz Hernández Matías, Greetchen Díaz Muñoz and Giovanna Guerrero Medina, detail each of the activities designed based on studies on effective science education and inclusion practices, but adapted to the Puerto Rican reality. In addition, they discuss the multiple evaluation strategies they used.

"The work of a scientist is not complete if one does not communicate the findings and validate them under the critique and review of experts. In the same way, there is no point in having an effective educational program if we do not share it with others who can learn from our experiences and integrate our strategies in their own communities," said Guerrero Medina.

In the evaluations, the girls significantly increased their self-confidence in their science skills, a metric that has proven to be important for continued interest and involvement in science. The impact to the participants was clear, explained Hernández Matías: "They really enjoy the STEM workshops and visits to university research labs."

Among the most revealing data in the article were the girls' comments, sharing in their own words how "Seeds of Success" changed their perception of STEM disciplines and their ability to be successful scientists. For example, one girl said, "Now I know more about STEM careers and I know what I want to study in the future." Another girl commented that "participating was an unforgettable and inspiring experience. I was able to meet other girls interested in learning science, just like me." In fact, there are alumnae who are currently doing research at the Universities of Puerto Rico, Harvard, Stanford and Yale, among many others.

A unique experience that the girls undertake under the mentorship of a STEM professional is the STEM Ambassador project. The girls' creativity with these projects, according to Díaz Muñoz, is truly impressive: "Some girls have created butterfly gardens for their schools, science magazines, video games, science clubs, and even a school science fair that continues to be held under the leadership of new students at what was once their school."

The next goals for "Semillas de Triunfo," according to the researchers, are to maintain its quality, use external funding such as that received by L'Oreal Caribe to support alumnae to continue developing in the sciences, and export the model to New Haven, Connecticut, a predominantly

Hispanic and African-American community in the United States.

Tags:

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