

NASA awards million-dollar grant to the UPR Río Piedras Campus to strengthen water quality research and education [1]

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The National Aeronautics and Space Administration (NASA) has awarded a \$1.2 million grant to the Puerto Rico Center for Research and Education in Water Monitoring and Quality (PR-CREWmq), a collaborative initiative aimed at strengthening research, monitoring, and education capacities around water quality in communities vulnerable to the effects of extreme climate events.

The project, which will take place between 2025 and 2028, will integrate satellite data provided by the NASA Earthdata Gateway platform and its Pathfinder tool with empirical data generated by the communities themselves. This combination will make it possible to identify and map critical water quality parameters such as chlorophyll-a, sea surface temperature, turbidity, and dissolved organic matter—facilitating early alerts about harmful algal blooms, salinity shifts, and sedimentation.

One of the project's main goals is to empower local communities—particularly those operating community aqueducts and grassroots organizations in the municipality of Vieques—by providing them with tools and training to collect, interpret, and use environmental data in decision-making about their most vital resource: water.

“This project represents an unprecedented alliance between NASA’s satellite science and the local knowledge of our communities,” said Dr. Eduardo Nicolau López, project director and professor at the University of Puerto Rico-Río Piedras. “We want communities to have the tools they need to understand changes in the quality of their water sources, make informed decisions, and strengthen their resilience to increasingly extreme climate events.”

Meanwhile, Chancellor Dr. Angélica Varona Llavona stated, "This grant is a new and categorical testament to the importance of the research being carried out at the University of Puerto Rico's Río Piedras Campus, and how we are inserting ourselves into helping address the problems affecting our citizens' daily lives."

"This campus," she affirmed, "continues to serve the people of Puerto Rico with excellence, even under conditions of economic constraint."

PR-CREWmq will also include the creation of an interactive dashboard that integrates satellite data and local observations, using a green-yellow-red color-coding system to indicate water quality conditions in real time. In addition, the project includes participation from graduate and undergraduate students, who will receive specialized training in remote sensing, environmental sensors, and scientific data analysis. The project will also recruit community liaisons responsible for collecting data that will feed into the initiative.

Furthermore, the project's co-director, Dr. Liz Díaz-Vázquez, emphasized: "This project will serve these selected communities and offer them important educational and scientific tools related to water quality issues. The project will create an alliance between university academics, citizen scientists, and other organizations for the benefit of Puerto Rico. Another important aspect is that we will have a dedicated laboratory at the university to support communities with the complex measurements they may require."

The grant, Grant #80NSSC25M0068, reinforces NASA's commitment to community engagement, environmental sustainability, and equity in access to scientific information.

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