DISTRIBUTION OF STUDENTS

	UPRRP	UPRM	UPRP	
	4	4	1	30%
i	5	11	5	70%

Total of 30 students enrolled

	UPRRP	UPRM	UPRP	
	9	5	4	53%
i	3	10	3	47%

Total of 34 students enrolled



	UPRRP	UPRM	UPRP	
Å	5	8	1	44%
i	4	7	7	56%

Total of 32 students enrolled



What is

After a natural disaster, multiple disciplines need to come together to rebuild the damaged infrastructure using new paradigms. Commonly, the academic preparation of scholars on infrastructure-related disciplines takes place in

isolated professional domains, rarely tackling interdisciplinary problems or learning from the systematic research of previous experiences. In Puerto Rico, the aftermath of Hurricanes Irma and Maria has created awareness regarding the education on infrastructure-related disciplines to provide transdisciplinary solutions to pertinent complex challenges. The Resilient Infrastructure and Sustainability Education - Undergraduate Program (RISE-UP) is a collaborative platform among three campuses of the University of Puerto Rico System. Each of these campuses offers a different educational component relevant to this enriching educational initiative.

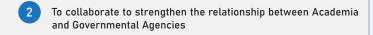
IMPACTS

- The project trains faculty members and students so that the framework developed as part of this research can be implemented in the curricular sequence of other courses and colleges. The modules developed will be used as a guide for designing, developing, and implementing other courses.
- RISE-UP has attracted students from Engineering and Architecture programs.
- The project serves as the foundation for creating additional courses that could be common to all three campuses. This project is the first step of a long-term vision to provide Resilient Infrastructure and Sustainability Education.
- The project serves as an example of the advantages of integrating information technology to allow students from different campuses to work together towards a common goal.
- The database will become a tool to be used by academics, professionals and community members to learn from past experiences and use the cases as tools for better decision making in the planning and implementation of resilient/sustainable solutions for infrastructure.
- The remote collaboration and practical nature of the courses greatly improves education related to resilient infrastructure in the disciplines of environmental design, engineering, surveying and construction.
- Students that graduate from the program have an increase in awareness and knowledge of the problems associated with resiliency and sustainability in the context of Puerto Rico and other communities in the US and the world affected by extreme environmental conditions and the role of the interdisciplinarity in the development of effective solutions.

GOALS



case studies have been developed by students enrolled in regular RISE-UP courses in years 1, 2 & 3.



Federal Emergency Management Agency (FEMA)

US Army Corps of Engineers (USACE)

American Red Cross, Puerto Rico Region ←

College of Architects and Landscape Architects of Puerto Rico

Professional College of Engineers and Land Surveyors of Puerto Rico

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DISSEMINATION **Selected Publications**



Complexity Mapping for Resilient and Sustainable Infrastructure: The Doppler Radar in Puerto Rico Case Study", International Congress of Engineering, Sciences and Technology (IESTEC VII), Panama City, Panama, October 2019 (paper)

Design and Assessment of Architecture/ Engineering / Construction (AEC) Curricula for Resilient and Sustainable Infrastructure" American Society for Engineering Education (ASEE) Annual Conference, Virtual, June 2020 (paper)

Enhancing Student Preparedness Through Experiential Learning: Lessons Learned from Assessing Building Structural Damages after the January-May 2020 Earthquakés in Puerto Rico" LACCEI International Conference, Virtual, July

RISE-UP: An Interdisciplinary Learning Tool to Generate Sustainable and Resilient Infrastructure, International Journal of Natural Disasters, Accidents and Civil Infrastructure. Vol. 19-20, 17, Virtual, February 2021 (paper)

Championing Hispanic Student Success following Natural Disasters in Puerto Rico Paper presented at 2021 ASEE Virtual Annual Conference Content Access, Virtual Conference, July 2021 (paper)

Developing Case Studies for a Repository for Resilient Infrastructure and Sustainability Education following a Natural Disaster Paper presented at 2021 ASEE Virtual Annual Conference Content Access, Virtual Conference, July 2021

Lessons Learnt from Participating in a Virtual Interdisciplinary Undergraduate Research During the COVID-19 Pandemic, LACCEI International Conference Virtual, July 2021 (paper)