



## Urban Resilience to Extremes Sustainability Research Network Research Experiences for Undergraduates (REU) SUMMER 2017

### Opportunity 5: Phoenix, AZ

#### **Financing options for green infrastructure projects in San Juan, Puerto Rico: Transitions and implementation for urban resilience to extreme weather events**

Under the direction of Drs. Mathieu Feagan, David Swindell and Tischa Muñoz-Erickson at ASU, the REU student will research options for navigating the current financial landscape that shapes which and how infrastructure projects move forward. This research project aims to describe a suite of financing options relevant to San Juan's (Puerto Rico) present financial circumstances and stakeholder priorities. These financing options will be integrated into a social-ecological-technical-systems (SETS) decision support tool, available to practitioners across the Urban Resilience to Extremes Sustainability Research Network (UREx SRN) and beyond. The UREx SRN aims to link scholars with city and community practitioners to accelerate innovative urban sustainability projects that increase resilience to extreme weather events related to climate change (for details see: <https://sustainability.asu.edu/urbanresilience/>).

Financing is one of the top practitioner concerns in helping cities transition toward greater resilience to extreme weather events. Exploring financing options that can support the scenario planning process is therefore a critical part of cities' participation in the UREx SRN. Being the first city within the network to kick off the scenario planning process on 3 February 2017, San Juan offers the opportunity to put forth a strong example of the need to consider financing within the scenario planning process itself. Based on the different scenarios generated by stakeholders in February (workshop 1), this research project will help identify which financing options are available to support transitions and implementation, such as: i.) public financing through tax revenue, research grants that can be combined with public infrastructure monies, crowd sourcing, etc.; ii.) public-private partnerships through tax free bonds, resilience investors with a tax flow return, micro-credit banks etc.; and iii.) corporate social responsibility angles that appeal to particular corporations. These financial considerations (incorporated into scenario workshop 2) will help stakeholders move forward with one of their scenario transition pathways, while also contributing information on financing options into the SETS decision support tool being developed by the SETS Strategies Task Force.

#### **REU Activities:**

- Work with the San Juan researcher-practitioner team
- Work with the UREx SRN Transitions and Implementation Working Group
- Obtain information on the city's total revenue, debt, expenses, and credit history
- Describe instances where the private sector has invested in urban infrastructure projects in the past
- Inquire into how other resilient city initiatives have been financed.

#### **REU Desired Qualifications, Interests and Skills:**

- Have knowledge of infrastructure financing within an international development context
- Be fluent in Spanish and English
- Have an interest in sustainability planning and stakeholder inclusivity processes
- Enthusiastic and well organized