



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

Opportunity 4: Phoenix, AZ

Cost-effectiveness of municipal climate change adaptation strategies

Under the direction of Drs. Marta Berbés, David Iwaniec and Tischa Muñoz-Erickson at ASU, the REU student will work with the UREx SRN SETS Strategies Task Force that has documented hundreds of adaptation strategies from planning and policy documents addressing flood, drought, and heat. The task force is beginning the crucial next step of organizing these strategies in a manner that is useful for decision makers. In particular, financial information about the strategies (e.g., implementation cost, maintenance, funding mechanisms) that is often considered by decision-makers. The REU project will provide information on costs and effectiveness of green infrastructure for the adaptation strategies identified in the database and qualify those findings in terms of evidence. Ultimately, this information will be used to create a standalone web tool for decision-makers.

The SETS strategies task force has identified and documented hundreds of adaptation strategies based on a review of policy and planning documents for each of the nine UREx network cities. The data collected serves several purposes: first and most immediately, the strategies identified serve as departing points for strategic visions of the future. Hence, the strategies are integrated into the scenario planning workshops. Second, given the strategies vary widely between cities, their characterization will be used to conduct a comparative analysis that will allow identifying patterns and blind spots between adaptation measures in each of the cities. Third, in the long term, the strategies will be incorporated in standalone products or tools to assist city practitioners in making decisions about the types of strategies to implement to face extreme heat, flood and drought events.

REU Activities:

- Find and input information on the costs of adaptation strategies previously identified by the SETS task force. To make the scope of the work manageable, the student will focus only in one type of strategy, e.g. green infrastructure.
- Find information on the mechanisms used to finance the adaptation strategies (e.g., private-public partnerships, subsidies, etc.)
- Construct graphs, figures or other visuals to display information
- Assist with the analysis of all dimensions of the adaptation strategies identified by the SETS task force as needed
- Develop a research poster for the 2018 UREx All-Hands Meeting

The ideal REU candidate will:

- Have a background on climate adaptation and be familiar with the UREx SRN project.
- Demonstrate skills searching the grey and academic literatures to assess costing and sources of funding for specific adaptation identified by the SETS task force.
- Be a meticulous record-keeper.
- Have good communication skills in English and Spanish (desired)