

REU Proposal December 19, 2019

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Thirsty: Access to Drinking Fountains and Tap Water in metropolitan Phoenix

On hot summer days, access to drinking water is a public health imperative. Drinking fountains, also called water fountains or bubblers, provide a public source for drinking water. The current literature largely focuses on public school drinking water access and quality, the benefits of school drinking water access, its impacts on sugary beverage consumption, and drinking fountain water quality. However, recent urban heat research in three underserved communities in metropolitan Phoenix highlighted the lack of drinking water available to the public, especially along routes to schools and transportation nodes. As a result, dehydration and other heat related health risks are elevated, especially for those with pre-existing health conditions, children, and the elderly. The aim of this research is to map public drinking fountains and access to tap water in three neighborhoods in South Phoenix, Mesa, and Tempe.

The REU will use existing apps such as WeTap, Tap-Find Water Anywhere, and Fountain Finder, and Google Street View to develop a hyper-local drinking water access map. The student will ground truth this data in three neighborhood areas to photograph drinking fountains/tap water access, uncover other drinking water sources, and supplement existing maps. Last, the REU will generate a comprehensive water access map, similar to the map of fountains in Paris:

<http://www.eaudeparis.fr/carte-des-fontaines/>. Data on access to drinking fountains/tap water per capita will be compared between the three neighborhoods.

This information can be used for heat mitigation and adaptation planning and policy, and the methodology can be scaled up to the regional level to enable equitable access to water sources. A better understanding of public drinking and tap water availability will augment the UREx research portfolio on urban heat resilience, vulnerability, adaptive capacity, and community adaptation and mitigation.