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Project Information?

5R01ES022722-03

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Project Number: 5R01ES022722-03**Contact PI / Project Leader:** [ENGLISH, PAUL B](#)**Title:** USE OF COMMUNITY-BASED MAPPING AND MONITORING TO REDUCE AIR POLLUTION EXPOSURES**Awardee Organization:** PUBLIC HEALTH INSTITUTE

Abstract Text:

DESCRIPTION: Imperial County, California, near the U.S./Mexico Border, is a low-income, primarily Latino community with a long history of cumulative exposures, including poor air quality. The county has consistently had one of the highest asthma hospitalization and emergency room visit rates in the state for school-aged children. The California Environmental Health Tracking Program- a program of the Centers for Disease Control and Prevention, the California Department of Public Health, and the Public Health Institute- are partnering with Comit  C vico Del Valle and the University of California, Berkeley to conduct a community-engaged project to reduce air pollutant exposures in this region and improve the health of its residents. The goals of the project are to: (1) Engage community members to define and map local hazards and assets to highlight factors contributing to cumulative exposures, community vulnerability and resilience; (2) Deploy a network of inexpensive real-time air monitors which will relay data to the internet for immediate information on pollution levels; (3) Use state of the art land use regression modeling to develop the most accurate and detailed picture possible of PM10, PM2.5, and NO2 exposures throughout the County for identification of hot spots near vulnerable populations; (4) Develop a public health action plan for reducing exposures, improving health, and ensuring project sustainability; and (5) Conduct an evaluation of the project, including partnership processes, community involvement in the research, and resulting public health actions. This project utilizes innovative approaches with the potential to provide sustainable public health benefits and ultimately serve as a model for community-engaged environmental health action. First, the project will augment traditional practices related to air quality monitoring by utilizing community expertise, priorities and direction to inform the placement of low cost air quality monitors. It will also develop novel methods to combine data from the low-cost monitors with existing data sources to create high spatial and temporal resolution maps of air pollution. Finally, the project will enhance a community-initiated online mapping tool with air quality data from the monitors. This project will ultimately build community capacity by developing skills related to asset/hazard mapping, air monitor site selection, and research and action related to hazards and environmental health.

Public Health Relevance Statement:

PUBLIC HEALTH RELEVANCE: This research will engage community residents to: identify environmental hazards and assets in their community, determine the placement of air monitors, and develop a public health action plan. The project will build community capacity by developing skills and knowledge related to research, hazard/asset mapping, air quality monitors, environmental hazards and health, advocacy, and project evaluation. The research has the potential to create detailed, sustainable air quality monitoring in Imperial County, with the opportunity to affect policies toward reducing air pollution exposures and improving environmental health for Imperial County residents.

Project Terms:

Action Research; Address; Advocacy; Affect; Air; air monitoring; Air Pollutants; Air Pollution; Area; Asthma; Awareness; base; California; Centers for Disease Control and Prevention (U.S.); Child; clinical care; Communication; Communities; community building; Community Participation; contaminated water; cost; County; Data; Data Analyses; data modeling; Data Quality; Data Sources; design; disorder prevention; Economic Factors; Emergency department visit; Ensure; Environmental Exposure; Environmental Hazards; Environmental Health; Epidemiology; Evaluation; experience; Foundations; Geographic Information Systems; Goals; handheld mobile device; hazard; Health; Health Benefit; Health education; Health Hazards; Hospitalization; Hot Spot; improved; innovation; Institutes; Internet; Knowledge; land use; Latino; Low income; Maps; member; Methods; Mexico; Modeling; Monitor; Nitrogen Dioxide; novel; Outcome; Particulate Matter; Pesticides; Physical environment; Policies; Pollution; Process; programs; Public Health; real time model; Recording of previous events; Reporting; Research; resilience; Resources; School-Age Population; Site; skills; socioeconomics; Technical Expertise; Technology; temporal measurement; Time; tool; Universities; Vulnerable Populations; Wood material; Work

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