

The Air Sensor Citizen Science Toolbox: A Collaboration in Community Air Quality Monitoring and Mapping

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Abstract

The Air Sensor Citizen Science Toolbox is being developed by the US EPA with resources and other tools that can be used by citizens to learn more about air sensor technology. The toolbox has an overarching goal of providing guidance and instructions to citizens to allow them to effectively collect, analyze, interpret, and communicate air quality data (www.epa.gov/head/airsensortoolbox). EPA's Office of Research and Development is collaborating with select EPA Regions and local community organizations to develop sensor packages for community-based monitoring to initiate the long-range goal. A pilot community involved in rolling out specific components of the toolbox is bordered by highways, rail yards, major port activities, international airports, and industrial facilities, amongst others. It is believed that residents might be exposed to a variety of airborne pollutants from these sources. To achieve the project's goal to raise awareness of local air pollution levels through citizen science-based monitoring, scientists involved in the pilot project are:

- Working with community members to develop a study design for monitoring air quality in the community based on sound science and local community concerns;
- Assisting the community in selecting appropriate pollutants for citizen scientists to monitor;
- Providing necessary environmental sensors, one-on-one training, and written directions for sensor use;
- Guiding community members on data analysis, data viewing options, and communication.

A future goal of this pilot project is to translate these methods across other EPA Regional offices so they can collaborate with their local community action groups and address similar issues. The Citizen Science Toolbox has the potential to be a valuable resource for such collaborations.