

Examples of EJ Screening and Analysis Approaches
Thursday, 1:00-1:55 p.m.
Grand Ballroom

Engaging Community Stakeholders in TRI Sites Sampling and Geographic Information Systems (GIS) Mapping with ArcGIS Online, EJ SCREEN and the myRTK Tool

David Padgett and Shonka'an Randle, Presenters

The Toxics Release Inventory (TRI) University Challenge supports the efforts of the Tennessee State University (TSU) Geographic Information Sciences Laboratory to study air quality at the James A. Cayce Homes, Nashville's largest public housing community. 88% of the 2400 residents are African American, with 89 percent of households headed by a single parent. 57% percent of residents are children under the age of 18.

The community is downwind from several industrial facilities, some of which are TRI releasers. The Cayce Homes population has some of the highest rates of pediatric asthma Nashville. The TSU TRI University Challenge team and community stakeholders are taking air quality samples using Summa™ canisters. Stakeholders are mapping air sampling locations using Global Positioning System (GPS) units and Geographic Information Systems (GIS) software. The samples are being analyzed for toxic constituents using gas chromatograph methods. Results from preliminary 10-second air samples revealed traces of Ethanol, Benzene, and Carbon Disulfide. Preliminary results of 20 one-hour air samples include several toxic air constituents at significant concentrations. Sampling results are being shared with stakeholders at community workshops at the Martha O'Bryan Center (MOBC), the primary community partner organization. Local residents are using the EPA's My Right to Know (MyRTK) tool to compare air sampling results with nearby TRI facility releases. The air sample locations are being mapped onto the EJ SCREEN platform to assess levels of social vulnerability and health threats to the residents of Cayce Homes and environs. The primary deliverable will be a comprehensive guidebook for stakeholders interested in engaging in citizen science-based air quality sampling efforts. The guidebook will be written in vocabulary easily understandable for laypersons and will empower stakeholders with knowledge necessary to engage in actions to mitigate, and/or eliminate the negative impacts of TRI facility releases upon their communities.

Using the Risk-Screening Environmental Indicators to Develop the Environmental Justice Screening Method for California

Madeline Wander and Justin Scoggins, Presenters

Regulators often lack a methodology to assess the cumulative impacts of environmental hazards in working to address the persistent patterns of environmental inequality facing our nation and its regions. Starting in 2007, Rachel Morello-Frosch (UC Berkeley),

Manuel Pastor (USC), and James Sadd (Occidental College) sought to meet this challenge by working directly with communities—through an iterative process of stakeholder meetings and “ground truthing” data—to develop the Environmental Justice Screening Method (EJSM). Now in its third iteration, the EJSM is a relatively simple, flexible, and transparent mapping and scoring procedure that examines cumulative impacts and social vulnerability at the neighborhood level within California regions. Initially created for the California Air Resources Board, the EJSM assesses cumulative impact along four dimensions: hazard proximity and land use; air pollution exposure and estimated health risk; social and health vulnerability; and climate change vulnerability. In particular, we use the 2008-2010 average toxic concentrations from the Risk-Screening Environmental Indicators model—which models data from the TRI—as part of the EJSM’s health risk layer. Since its creation, the EJSM has been used by organizers and policy makers to identify overburdened communities in need of investment California—and is widely considered the “precursor” to the State’s CalEnviroScreen tool that identifies “disadvantaged communities” in which 25 percent of California’s cap-and-trade revenue is being invested pursuant of California Senate Bill 535. This presentation will expose researchers, policy makers, and organizers who work outside of California to ways they can use the TRI to identify overburdened communities in their own regions and states.