

# Abstract

## **GIS Modeling of Toxic Air Releases in an Environmental Justice Community**

**Track:** Environment Solutions

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A GIS-based air contaminant dispersal model is used to assess the potential health and environmental impacts of several Toxic Release Inventory (TRI) reporting facilities upon a predominantly African American community in Memphis. The project, conducted in association with the Regional Environmental Justice Office of the Sierra Club, focuses upon five large chemical plants that border the Douglass Community on the east, west, and south. Maps linked to 2000 U.S. Census and 1995-2001 TRI attribute data indicate that the community is being exposed to significant amounts of toxic substances. Human health data from the population "at risk" according to the dispersal model are analyzed for potential dose-response relationships.

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