

## EPA scientists develop science and tools to help communities identify and prioritize environmental health issues

### Issue:

Community groups want to understand their exposures and risks to environmental pollutants. They also want to know how to effectively reduce exposures to pollutants with the highest risks. If relevant science-based tools are not readily available, decisions may be based solely on the perception of exposures and risk. EPA scientists are developing tools to improve community access to scientific information.

Community involvement is crucial in defining and prioritizing environmental health issues for specific areas or groups of people. Community groups and members can supply local knowledge and interpret results in the context of local decision-making. Because of this, communities are playing an increasingly central role in defining environmental problems and identifying the information needed to address these problems. Involvement of communities is equally important where evidence indicates disproportionate exposures or risks are caused by localized contaminants or other environmental conditions.

To support communities with this process, user-friendly tools are needed that provide environmental exposure and health-related information. To ensure these tools are scientifically sound, research is necessary to advance the science to take into account the many factors that may impact human exposure and health risks within a community — including chemical and non-chemical factors.

### Science Objective:

EPA is developing the Community-Focused Exposure and Risk Screening Tool ([C-FERST](#)) — a GIS & resource access Web tool to support cumulative human exposure and risk screening assessments, and help build sustainable, healthy communities. It is designed to assist communities with the challenge of identifying and prioritizing issues, and making decisions about exposures and risks within their community. C-FERST supports EPA's priorities for cleaning up communities and working for environmental justice to protect vulnerable groups of people.

C-FERST provides a framework for collaborative research and information sharing to understand community-based exposures and risks. It will be used to assess exposures to multiple chemical factors and, eventually, will incorporate non-chemical factors. Ultimately, it is anticipated that the improved science and user-friendly tool will empower environmental managers and community residents to make decisions about environmental issues specific to their location that result in better-informed decisions.

### Application and Impact:

C-FERST will link to and build upon other community-focused tools to help identify human exposures within a community and help prioritize issues for taking action to improve public health.

C-FERST has been developed in collaboration with certain projects of the

EPA-coordinated community program called CARE (Community Action for a Renewed Environment). The CARE grant and technical assistance program ([www.epa.gov/care](http://www.epa.gov/care)) offers an innovative way for communities to reduce pollution in their local environment.

During C-FERST's development, EPA scientists will listen to community residents and local officials to refine the tool. In 2011, EPA scientists will work with several CARE communities to test and refine the tool. C-FERST ultimately will offer information for the general public. Future users could include community members and leaders, as well as federal, state, or local agencies working with community partners.

Eventually, C-FERST users will be able to view maps and community reports for environmental issues such as air toxics, diesel exhaust, lead, environmental tobacco smoke, water pollution, fish consumption, residential pesticides. Users will also be able to view cumulative risk estimates for lung cancer, asthma, and early neurotoxicity effects. As the tool is refined and populated with available information, users will be able to:

#### **Consider/identify environmental issues by:**

- Viewing guidance, and learning about issues other communities have considered
- Accessing information about environmental, health, social and economic issues
- Accessing methods for local monitoring

#### **Access fact sheets for environmental issues of concern including:**

- EPA and other federal fact sheets for over 40 community environmental issues

#### **Visualize exposure/risk via mapping tools that allow users to:**

- Map environmental concentrations, human exposures, and health risks
- Overlay pollutant sources

- Overlay demographic data for identifying vulnerable populations
- Add local data
- View potential impact of solutions

#### **Generate environmental issue profiles with the help of:**

- Fact sheets, web-links, local exposure estimates, maps, and community solutions available in a consistent report format for each selected issue

#### **Prioritize your community's issues by:**

- Viewing community data table
- Accessing examples of risk ranking approaches

#### **Explore potential solutions including:**

- Links to fact sheets on exposure/risk reduction actions
- Information on promising practices for sustainable community solutions

#### **Link to other community-relevant tools including:**

- A searchable compendium of community-relevant tools, and Web links to other tools.

#### **References:**

Zartarian et al., 2010. The EPA's Community-Focused Exposure and Risk Screening Tool (C-FERST) and Its Potential Use for Environmental Justice Efforts. *American Journal of Public Health*, accepted.

Zartarian, V., Schultz, B. 2009. The EPA's human exposure research program for assessing cumulative risk in communities. *Journal of Exposure Science and Environmental Epidemiology*.

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