

# Counting and Calculating

## How Does Math Matter When You're Fighting Pollution?

Steve Dickens

In the United States, we like to say we live in a free country. However, these days, laws that protect "freedom" are sometimes aimed more at protecting the freedom of big industries to pollute. Industries that discharge toxic substances don't have to prove that those substances are safe. If residents suspect a problem, *we* have to prove that the toxic substances are *unsafe*. In many communities, people are using data and statistics to make their case.

### "A handful of crazies"

In the 1990s, residents in Corrales, NM, began to have symptoms like fainting, rashes, seizures, and irritations of the nose, throat and lungs. Then there were miscarriages and birth defects. Some people blamed the Intel plant located 100 yards uphill.

But Intel supporters wanted to ignore residents' concerns. The *Albuquerque Journal* quoted a state representative who said only a "handful of crazies" had complaints. So, Corrales Residents for Clean Air and Water reached out to River Network, a national environmental organization, and the Southwest Organizing Project, a regional community organizing group, for help. Together,

### So You Want to Conduct a Study?

Environmental organizations, public health schools, and local departments of health can be helpful resources. Before you start, check out "Is a Health Study the Answer for Your Community?" by Madeleine Scammell and Greg Howard. (Contact [mks@bu.edu](mailto:mks@bu.edu) for a copy.) And before you start paying for air, soil, or water tests, talk to an environmental organization with experience in monitoring.



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### HEALTH SURVEY STATISTICS LINK PROXIMITY TO INTEL WITH ILLNESSES

Statistical analysis of responses to a health survey among Corrales residents reveals strong correlation between proximity to Intel and certain adverse health effects.

Results of a survey mailed to all Corrales residents in February 2002 show that people living near Intel's microchip manufacturing plants are more likely than other villagers to have persistent coughs, frequent headaches, sore throats and other allergy-like symptoms.

And that's not at all likely to be pure chance. Detailed statistical analysis by the Oregon-based River Network indicates that odds are only two in 100 that the link between proximity to Intel and

Among the more startling findings was the contrast between the exposure to Intel emissions and smoking on the likelihood that people report persistent coughs.

People who live near Intel and smell unusual odors are nearly three times more likely to have a persistent cough than people who don't. By contrast, the survey found that people who smoke are only twice as likely to have a persistent cough as people who don't smoke.

The health survey was conducted by Southwest Organizing Project (SWOP) and Corrales Residents for Clean Air and Water (CRCAW). A mass-mailed questionnaire, based on a NM

of New Mexico.

Returns from that mailing were then field tested with follow-up interviews by River Network for corroboration.

The mission statement for the health program of the not-for-profit River Network is "to help people investigate, understand and take action to address community health problems related to pollution."

The group's assistance with the Corrales health survey was arranged through SWOP and a former UNM faculty member with a doctorate in environmental epidemiology from the Harvard School of Public Health.

they designed and conducted two health surveys to show there were a number of real problems.

### Data Supports Residents' Case

The survey results clearly demonstrated two things: 1) over 55% of Corrales residents surveyed reported that they smelled obnoxious odors; and 2) those who lived close to Intel and reported smelling obnoxious odors had significantly more health problems than those lived farther away from Intel or did not smell obnoxious odors.

The study had to be carefully designed so that other factors like smoking, drinking, or a history of working around toxic chemicals did not affect the findings.

The data were presented in hearings set up to review Intel's air quality permit. In the end, Intel agreed to reduce their emissions.

The results of this research produced data that helped the community make its case. Sometimes survey results do not support a community group's case. Before starting a health study, make a careful plan and talk it through with others who have experience doing health surveys.

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