# The Steubenville Comprehensive Air Monitoring Program (SCAMP): Initial Ambient Air Results

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**Summary**

The Steubenville Comprehensive Air Monitoring Program (SCAMP) is a comprehensive ambient air-monitoring program that began in the summer of 2000. CONSOL Energy R&D, the Harvard School of Public Health, Ohio University, Wheeling Jesuit University, Franciscan University of Steubenville, and St. Vincent College have formed a team to conduct the two-year sampling program that will clarify many of the uncertainties in the current understanding of fine particulate matter ($PM_{2.5}$) concentration and exposure.

SCAMP's main objectives were designed, in part, to respond to the 1998 National Research Council recommendations on $PM_{2.5}$. These recommendations are to do research on the health effects of $PM_{2.5}$, obtain human exposure measurements, and do atmospheric monitoring. SCAMP extends these research efforts by addressing how fine particulate matter varies geographically and with time, and by investigating the chemical composition of the particles. The program's main goal is to produce a scientifically sound data set on fine particle concentrations and compositions, and co-pollutants, in ambient air, indoor air, and personal air. This data set will be made available for epidemiological studies, long-range transport studies, and fine particle compliance programs.

An urban ambient air sampling "super site" is located in Steubenville, Ohio. Additional fine particle samples are collected at four sites surrounding Steubenville. Additionally, indoor concentrations and personal exposures to particles, $NO_2$, $SO_2$, and $O_3$, are measured for volunteer elderly and child subjects. The chemical constituents of the outdoor and indoor particles are being characterized.

This presentation concentrates on the outdoor sampling results. Data from the first twelve months of sampling are presented. This includes $PM_{2.5}$ concentration and composition, as well as the relationships among gaseous criteria pollutants ($NO_2$, $SO_2$, CO, total hydrocarbons, and $O_3$), weather, and $PM_{2.5}$ concentration and composition. Analyses focus on how pollutant concentrations vary with location, season, and weather conditions. Correlations among the super site and four remote site $PM_{2.5}$ concentrations are presented.

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