

HILARY R. HAFNER

Vice President, Air Quality Measurements and Data Analysis

Educational Background

M.S., Chemical Engineering, University of California, Los Angeles

B.S., Chemical Engineering, Oregon State University

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Professional Experience

At STI since 1989, Ms. Hafner directs the Air Quality Measurements and Data Analysis Division. Her research interests include air quality data validation, data analyses, and training covering hydrocarbon, hazardous air pollutant (HAP), and particulate matter (PM) data. Ms. Hafner is currently leading efforts to document trends in criteria pollutants, PM_{2.5}, and HAPs. Ms. Hafner's data analysis projects involve developing, managing, and validating air quality data sets; developing innovative graphical methods to display data; performing statistical analyses including multivariate, regression, and trend analyses; interpreting the data relative to current chemical models; and documenting and presenting analysis results. Ms. Hafner is also actively involved in training other air quality professionals in data validation and analysis techniques. She had a principal role in the planning, development, and presentation of data analysis workshops for the U.S. Environmental Protection Agency (EPA) including (1) HAP data analysis, (2) Photochemical Assessment Monitoring Stations (PAMS) and PM_{2.5} data analysis, and (3) monitoring network assessment techniques. Ms. Hafner also developed guidance for PAMS and HAP data validation, conducted validation and STI-developed data validation and visualization software (VOCDat) training, and co-conducted HAP emission inventory development and source apportionment training.

A representative sampling of analyses led or conducted by Ms. Hafner include (1) synthesizing and documenting findings from EPA's school air toxics measurement program; (2) performing a national assessment of temporal and spatial trends in HAPs; (3) applying the positive matrix factorization (PMF) source apportionment tool to speciated PM_{2.5}, organic carbon, and hydrocarbon data; (4) performing network assessments for national, regional, state, and local criteria pollutant, HAPs, PM_{2.5}, and PAMS programs; and (5) characterizing VOC data in the Northeast, Texas, California, Arizona, Lake Michigan area, and Mid-Atlantic region. Ms. Hafner led efforts to develop tools that efficiently enable the investigation of large data sets; HAP and PM_{2.5} monitoring network design and assessment, including the use of GIS-based tools such as ESRI's spatial analyst to suggest placement of monitors to meet various monitoring goals; and communication of complex technical problems to broad audiences. Ms. Hafner also worked with the British Columbia Ministry of the Environment to develop a framework for establishing a draft visibility goal as part of a visibility protection pilot program.

Ms. Hafner's graduate and post-graduate research on particle dry deposition focused on the use of both depositing and non-depositing (conserved) tracers to determine the deposition velocity of the depositing species (dual tracer method). Ms. Hafner was a research engineer with Chevron Research Company in the Engineering Research and Development Division's Environmental Group, performing emergency response modeling of sudden releases of hazardous chemicals.

Ms. Hafner consistently ranks among the top ten in the nation in her age group in U.S. Masters swimming competitions.

Memberships

Air & Waste Management Association (AWMA), American Institute of Chemical Engineers
Chair, AWMA Source Apportionment Technical Coordinating Committee