SIANA H. ALCORN
Group Manager, Exposure Assessment & Data Services

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Educational Background

B.S., Physics, *cum laude*, Sonoma State University

Professional Experience

Ms. Alcorn joined STI in 1997. Her primary duties are project management; data analysis, processing, validation, management, and acquisition; and supervision of data management software development efforts. These project and data analysis activities involve planning projects, organizing tasks, accumulating and organizing data, assessing data quality, understanding instrumentation limitations and measurement differences, and performing statistical and descriptive analyses. Ms. Alcorn performs or has performed these activities for epidemiological studies, routine and specialized air quality monitoring programs, ozone and particulate matter (PM) scoping studies, visibility studies, and ozone and air toxics analyses. Since 2007, Ms. Alcorn has been responsible for managing the development of STI's Data Management System (DMS) software. The DMS includes integrated tools that allow users to easily access, validate, analyze, visualize, and report aerometric data. The system supports automated and manual quality control checks and uses real-time instrument diagnostic data to verify ambient pollution readings. Ms. Alcorn is responsible for understanding the data management needs of various clients within the air quality community and translating these needs to the DMS development team.

Since 2000, Ms. Alcorn has concentrated on data processing, data analysis, and database preparation in support of epidemiological studies such as the southern California Exhaled NO and Children's Health Studies, the University of California at Berkeley (UCB) Chronic Ozone Health Effects Study, the UCB Health Benefits Study, the Fresno Asthmatic Children's Environment Study (FACES), the Loma Linda AHSMOG study, and various Kaiser air pollution epidemiological studies. She created software to efficiently parse, quality control, and manage large amounts of air quality data. She also developed software to spatially map air quality data, with and without spatial boundaries, to receptor locations of interest such as grid centroids, health study participant residences, residence ZIP codes, and school locations. She is experienced at assessing the suitability of spatial interpolation data to estimate air pollution exposures based on the spatial density of air quality monitors for a particular region and pollutant. She also developed algorithms to determine the uncertainty of spatially interpolated air pollution exposure estimates.

Ms. Alcorn is experienced in characterizing data from a variety of visibility and aerosol measurement types and participated in the development of a software package used to process and QC Automated Surface Observing Systems (ASOS) visibility data, VisDat. Ms. Alcorn analyzed the phase distributions of PM and PM precursors and the factors limiting secondary aerosol formation in California's San Joaquin Valley as part of the California Regional $PM_{10}/PM_{2.5}$ Air Quality Study (CRPAQS) data analysis project.

In support of the CRPAQS and Central California Ozone Study (CCOS) field studies, Ms. Alcorn performed acceptance testing for, installed, calibrated, and operated various air quality instruments. She is experienced in reviewing real-time and historical field data of various measurement types and platforms (surface and aircraft).

Ms. Alcorn is proficient in the use of many software tools including FORTRAN, SYSTAT, SQL, Oracle PL/SQL developer, GIS, and MS Office programs.

Memberships

International Society for Exposure Analysis
American Association for Aerosol Research

See http://www.sonomatech.com/ResPub/SHApub.pdf for a list of publications.