

JENNIFER L. DEWINTER

Air Quality Analyst



Educational Background

B.S., Earth Science, California Polytechnic State University
B.A., English, California Polytechnic State University

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Professional Experience

Ms. DeWinter joined STI's Air Quality Measurements and Data Analysis Division in 2008. Her responsibilities include air quality data validation and analysis, relational database development, and data retrieval and visualization. To perform these tasks, Ms. DeWinter uses a range of software programs, including Microsoft Excel and Access; SQL Server for developing and managing databases; STI's Data Management System (DMS) for validating, processing and managing ambient air quality data; statistical software such as SYSTAT for assessing trends and comparisons; and programs for processing and displaying data, such as Grapher, Esri's ArcGIS, IDL, and ITT's ENVI.

Ms. DeWinter's current projects include a trajectory modeling study designed to characterize air mass transport from the continental United States (CONUS) to the Arctic Circle. She is also working on integrating a fire emissions inventory with land-use and land management data to inform the design of a next-generation fire information reconciliation algorithm (SMARTFIRE). Further, Ms. DeWinter conducts source apportionment analyses using chemical mass balance (CMB) and positive matrix factorization (PMF) models and prepares user documentation for models and tools designed by STI. Ms. DeWinter also designs graphics for the EPA's air quality status and trends reports, effectively portraying science-based, national-scale data sets so that they can be understood by the general public.

Ms. DeWinter's past projects include data management and analysis on several real-time monitoring studies. The projects include (1) a multi-year near-roadway study of mobile source air toxics (MSAT) concentrations, primarily black carbon, indoors and outdoors at schools adjacent to U.S. Highway 95 in Las Vegas, Nevada, (2) a year-long monitoring study of air quality data during a roadway expansion with the Arizona Department of Transportation (ADOT), and (3) an evaluation of novel low-cost NO₂ sensors for use in air quality monitoring applications. On each project, Ms. DeWinter assisted with the administration of the data management architecture used to collect, store, and quality assure monitoring data obtained in real time at multiple monitoring locations and for many pollutants. She also performed data validation and data analysis to ensure high quality data and to assess and synthesize the study results.

Other past work includes multi-sensor analysis and processing of satellite data sets to support development of a high spatial resolution aerosol estimate during wildfire episodes in southern California. This work included processing and analysis of MODIS aerosol optical depth (AOD) data to establish a seasonal baseline of AOD and compare AOD to surface particulate concentrations. She has also performed validation and analysis of air toxics data, including an accountability assessment of ambient air toxics data before and after emissions regulations, a national-scale risk assessment using trends in air toxics, and development of a national toxics indicator.

Prior to joining STI, Ms. DeWinter worked as a research intern for the National Aeronautics and Space Administration's (NASA) DEVELOP National Program at the Langley Research Center. She used NASA satellite technology to investigate air quality trends in the U.S.-Canadian border region and developed an algorithm to determine optimal placement of solar energy resources around the country.

Memberships

American Geophysical Union, American Association for Aerosol Research (AAAR)

See <http://www.sonomatech.com/ResPub/JLDpub.pdf> for a list of publications.