JENNIFER DEWINTER
Air Quality Analyst

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Educational Background

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

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 the Microsoft Office suite; SQL Server for developing and managing databases; the 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, such as Grapher, ESRI's ArcGIS, and ITT's ENVI, for processing and displaying data.

Ms. DeWinter's current projects include 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. She is also performing data analysis of satellite, ambient ground air quality, and fuel loading data sets to compare them to estimated smoke emissions and transport during several wildfire test cases. 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, including the DMS and U.S. Environmental Protection Agency (EPA) PMF. Ms. DeWinter also designs graphics for the EPA's air quality status and trends reports, effectively portraying science-based, national-scale data sets that can be understood by the general public.

Past projects include analysis of Mobile Source Air Toxics (MSAT) concentrations, primarily black carbon, at schools near U.S. 95 in Las Vegas, Nevada. The project required processing and analyzing MSATs, measured by Aethelometers™ as a surrogate for diesel particulate matter (DPM), and has implications for public health research and regulations. Additional air toxics work includes 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