

Theresa E. O'Brien

Air Quality Analyst



Educational Background

B.A., Mathematics, *cum laude*, Sonoma State University
Single Subject Teaching Credential, Mathematics, Dominican University

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Professional Experience

Ms. O'Brien joined STI in 2000. Her key responsibilities include data acquisition, processing, validation and analysis, and database management. Ms. O'Brien has performed these activities for routine and specialized air quality monitoring programs across the United States. She has experience analyzing and interpreting ambient PM_{2.5}, PM₁₀, criteria pollutant, meteorological, visibility, and air toxics data.

Since 2000 Ms. O'Brien has organized tasks for the San Joaquin Valley and South Coast Air Quality Management District Photochemical Assessment Monitoring Stations (PAMS) projects, the Gila River Indian Community Air Toxics Data Validation and Analysis Project, the 2005 Joint Air Toxics Assessment Project (JATAP), and the Fresno Asthmatic Children's Environment Study (FACES). As part of FACES and the Children's Health Study (CHS), she has managed large databases and provided quality control and analysis support for exposure studies. She is the go-to person at STI in a number of important areas, including accessing the Air Quality System (AQS), validating data, and performing database work. Ms. O'Brien has controlled and validated large data sets (multiple parameters, multiple sites) during a number of field studies, including mobile source air toxics (MSAT) data collected at near-road schools in Las Vegas; Aethalometer data collected in Phoenix and elsewhere; and nephelometer data collected in Los Angeles. Most recently she designed and developed a relational database system to import, export, and provide loading, consumption and emissions summaries for various smoke models using data for specific fires with the capability of adding data for future analysis and quality control. Specific tasks included design testing, processing, and organizing data into databases; performing data validation and temporal trend analyses; and preparing data management procedures, documentation, and training material.

Ms. O'Brien is also a skilled instructor. Prior to joining STI, Ms. O'Brien taught high school algebra, geometry, applied mathematics, and honors pre-calculus. She continues to be involved in local high school mathematics programs.

Ms. O'Brien relies on her knowledge of a wide range of software programs, including the Microsoft Office Suite; custom software programs developed by STI (SurfDat and VOCDat); a custom software tool developed by Dr. Jay Turner at Washington University in St. Louis for processing Aethalometer data (AethDataMasher); statistical software such as Systat; and software for analysis and display such as Grapher, Esri's ArcGIS, and Google Earth Pro.

Memberships

California Mathematics Council