

## STEVEN G. BROWN

Group Manager, Aerometric Data Analysis



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### Educational Background

M.S., Atmospheric Science, Colorado State University

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### Professional Experience

Mr. Brown joined STI in 2001 and is Manager of the Aerometric Data Analysis group. His research focuses on characterizing spatial and temporal trends of volatile organic compounds (VOCs) and PM<sub>2.5</sub> and applying source apportionment methods using advanced factor analysis models such as positive matrix factorization (PMF). Mr. Brown organized, led, managed, and developed a number of small- and large-scale data analysis and tool development projects. These projects include conducting regional- and national-scale analyses, assessing trends, putting concentrations in perspective with meteorology and emissions changes, and analyzing near-field data, such as near-road ambient pollutant data. Additionally, Mr. Brown's projects have focused on developing geographic information systems (GIS)-based methods for compiling and analyzing spatially and temporally resolved ambient air quality data and synthesizing emissions, air quality, and wind/trajectory data. He developed and conducted training workshops on data validation techniques and software as well as on source apportionment applications using PMF. Mr. Brown recently led the management and analysis of 1.5 years of near-road mobile source air toxics (MSAT) data collected at schools in Las Vegas, Nevada. These projects were supported by Mr. Brown's strong statistical background and his broad knowledge of aerosol sources, transport, and chemistry.

Mr. Brown led source apportionment efforts using air toxics data collected from multiple measurement techniques; speciated PM<sub>2.5</sub> data from the Chemical Speciation Network, Interagency Monitoring of Protected Visual Environments network, and special studies; hourly VOC data from the Photochemical Assessment Monitoring Stations program; and continuous particulate matter (PM) data. He is currently working with the U.S. Environmental Protection Agency (EPA) to develop the next version of EPA PMF, and has developed training material on the application and use of PMF including the EPA PMF User's Guide. He served as Chair and Vice-Chair for a number of source apportionment and data analysis sessions at conferences sponsored by the Air and Waste Management Association (AWMA) and the American Association for Aerosol Research (AAAR).

Mr. Brown's research also includes performing accountability analyses of specific regulations on ambient air quality. Recent accountability projects include examining change (1) in levels of air toxics at sites near sources impacted by the maximum achievable control technology (MACT) regulations, (2) in NO<sub>x</sub> and PM<sub>2.5</sub> levels in areas where the NO<sub>x</sub> State Implementation Plan call was implemented, and (3) in local PM<sub>2.5</sub> concentrations after specific point sources were shut down. Mr. Brown has been a peer reviewer for a number of journals such as Atmospheric Environment and Environmental Science and Technology. He is currently pursuing his Ph.D. at Colorado State University (CSU), focusing on near-road aerosol mass spectroscopy (AMS) measurements and analysis.

Before joining STI, Mr. Brown was a Research Assistant at CSU, where he received his master's degree in Atmospheric Science. During his research, Mr. Brown became proficient in a range of air quality analysis issues, data and laboratory analysis techniques, and particulate and trace-gas pollutant monitoring equipment. Mr. Brown used gas chromatography-mass spectroscopy (GC-MS) to investigate particulate organic carbon.

### Memberships

Air & Waste Management Association  
American Association of Aerosol Researchers

See <http://www.sonomatech.com/staff.cfm> for a list of publications.