

STEVEN G. BROWN

Group Manager, Aerometric Data Analysis



Educational Background

Ph.D., Atmospheric Science, Colorado State University (in progress)
M.S., Atmospheric Science, Colorado State University
B.S., Chemistry, University of California, San Diego

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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 ambient aerosol and volatile organic compounds (VOCs), including applying advanced factor analysis models such as positive matrix factorization (PMF) and chemical mass balance (CMB). Mr. Brown has 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 methods based on geographic information systems (GIS) for compiling and analyzing spatially and temporally resolved ambient air quality data, and for 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_{2.5} 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. He has also developed training materials 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 & 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 affected by the maximum achievable control technology (MACT) regulations, (2) in NO_x and PM_{2.5} levels in areas where the NO_x State Implementation Plan call was implemented, and (3) in local PM_{2.5} 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 & Technology*. He is currently pursuing his Ph.D. at Colorado State University (CSU), focusing on near-road high-resolution aerosol mass spectrometer (HR-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