
Educational Background

M.S., Plant Sciences, Cornell University
B.A., Horticulture, Cornell University

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Professional Experience

Mr. Vaughn joined STI in 2001. He is currently assisting in the establishment and operation of four near-roadway monitoring sites in a study of road construction PM_{2.5}, PM₁₀, and mobile source emissions for the Arizona Department of Transportation and is the project manager for two ambient air quality monitoring sites at the Sunshine Canyon Landfill and the neighboring community of Granada Hills in Los Angeles County, California, for the City of Los Angeles. Mr. Vaughn also assisted in the establishment and operation of 10 monitoring sites in a study of near-roadway effects of mobile source air toxics (MSAT) on ambient air quality outside and inside nearby schools in Las Vegas, Nevada, for the Nevada Department of Transportation.

Mr. Vaughn was hired as the Field Manager for the Fresno Asthmatic Children's Environment Study (FACES) sponsored by the California Air Resources Board and the U.S. Environmental Protection Agency (EPA). FACES is designed to analyze the effects of air pollution on asthmatic children aged 6 to 14 years living in Fresno, California. Mr. Vaughn designed and built the FACES Microenvironmental Monitoring System and was responsible for deploying it in over 100 homes and at several schools in the Fresno area from 2002 through 2003. He maintains responsibility for several aspects of the FACES data processing, including database development, data quality assurance, and data analysis.

Mr. Vaughn provided field sampling and data analysis support for a study evaluating ambient carbon monoxide concentrations and meteorological parameters in Lake Havasu City, Arizona. Based on results of that study, he managed the design, installation, and operation of a monitoring network to provide real-time ambient CO concentration data and hazard alerts to police and fire department personnel in Lake Havasu City, Arizona. He continues to provide technical support in ongoing operation of the CO monitoring and alert system.

Mr. Vaughn assisted in upgrading and testing field measurement equipment used in the Southern California Children's Health Study (CHS) and continues to provide technical field assistance and QA support for additional PM_{2.5} measurements to support the CHS, as well as providing training, QA support, and data management for an intra-community PM variability study in 12 southern California cities. He also managed a field study, including data management and analysis, of PM₁₀ and PM_{2.5} in Marin County, California. Since 2004, he has held the primary responsibility for quality assurance (QA) and data validation of speciated PM_{2.5} data in an EPA-sponsored study at the Phoenix, Arizona, Supersite. He has contributed to the production of prototype air quality instruments including a lightweight, gas chromatograph for airborne measurements of greenhouse gases and a military grade, integrated, multi-pollutant measurement system. He also trained clients to evaluate mitigation strategies to control fugitive dust emissions from the high deserts of southern California.

Mr. Vaughn gained extensive experience in air pollution research during 10 years as a Staff Research Associate with the Statewide Air Pollution Research Center (SAPRC) and the Department of Botany and Plant Sciences at the University of California, Riverside. During this time he was based at the Kearney Agricultural Center in Parlier, just south of Fresno, California. He conducted micrometeorological experiments; conducted dust suppression research and demonstration projects; planned, configured, and constructed novel devices and field installations; and acquired and analyzed data.