

**BRYAN M. PENFOLD**  
GIS Coordinator/Air Quality Analyst



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## **Educational Background**

B.A., Geography, Sonoma State University

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## **Professional Experience**

Mr. Penfold joined STI in 2001 and serves as STI's Geographic Information System (GIS) Coordinator. Mr. Penfold is responsible for managing, maintaining, and coordinating activities relating to GIS. He acts as a primary point of contact for GIS matters and serves as the GIS technical resource for STI staff and clients.

Since joining STI, Mr. Penfold has concentrated on geographical data processing, analysis, and display to assess the relationship between spatial patterns in air quality and human health impacts for a variety of epidemiological studies such as the University of California at Berkeley (UCB) Chronic Ozone Health Effects Study, the UCB Health Benefits Study, the Fresno Asthmatic Children's Environment Study (FACES), and the National Institute of Health Traffic Data Scoping Study. Currently, Mr. Penfold is investigating methods to improve the use of traffic activity data and location-based data, which require a high degree of spatial resolution and accuracy, for the Southern California Children's Health Studies.

Mr. Penfold has used statistical and geospatial techniques to map air quality data and developed new methods for improving the quality and representativeness of emission inventory data. Mr. Penfold contributed to several gridded emission inventory development projects for the San Francisco Bay Area, central California, and the Phoenix area, all of which benefited from his expertise in generating GIS spatial surrogates for the spatial allocation of county-level emissions estimates. In support of the Arizona Department of Environmental Quality toxics monitoring program, Mr. Penfold used GIS technology to identify areas within the Phoenix region where diesel particulate matter (DPM) emissions are likely to be high and to identify potentially suitable locations for placing toxics monitors to better measure DPM. Mr. Penfold also worked with the U.S. Environmental Protection Agency (EPA) to develop a geographical characterization of new NCore station sites. NCore is a multi-pollutant monitoring program that will consist of about 55 urban and 20 rural stations.

Before joining STI, Mr. Penfold worked as a geography research associate at Sonoma State University and performed GIS-based work to examine trends in climate that may affect the Sudden Oak Death disease throughout California.

Mr. Penfold has experience using and developing applications with the following software: ArcGIS, ArcIMS, ArcPAD, Spatial Analyst, Microsoft Access, Microsoft Excel, ERDAS, and IDRISI image software.

## **Memberships**

Association of American Geographers  
Air & Waste Management Association