



Patrick H. Zahn

*Forecasting Program Lead
Project Manager*

Mr. Zahn joined STI in 2007. His primary responsibilities involve air quality forecasting and meteorological data analysis. As Lead Forecaster, he oversees technical and operational aspects of daily ozone and particulate matter forecasting for several regions across the United States. Mr. Zahn regularly directs meteorological analyses of high-pollution events to determine their causes and has developed statistical and conceptual tools to aid forecasting efforts on potential high-pollution days. He has also provided daily prescribed

burn decision support for the Flint Hills region of Kansas by forecasting the impacts of prescribed burns on regional air quality. Additionally, he has provided meteorological analysis supporting preliminary screening for exceptional events, as he did recently for the Louisiana Department of Environmental Quality by investigating the impacts of long-range smoke transport on ozone formation.

Since 2014, Mr. Zahn has successfully managed several PM_{2.5} and ozone air quality forecasting projects, including forecasting for Louisiana, Kansas, Minnesota, Ohio, and California. He also led air quality forecast training for the Nevada Division of Environmental Protection and an analysis of prescribed burn meteorological rules for the Mojave Desert Air Basin. He has worked on a variety of analysis and research projects, including a project funded by Caltrans to determine the effects of diesel particulate retrofit devices on NO_x emissions in current and future scenarios. Additionally, he has developed techniques for enhancing air quality maps for the public using air quality observations, satellite-based estimates, and air quality forecast model output.

In addition to his forecasting and data analysis activities, Mr. Zahn has led STI's video production efforts since 2008. Mr. Zahn creates webcasts and produces short outreach web videos that summarize seasonal air quality and high pollution episodes for specific regions. Mr. Zahn also produces air quality training videos and short technical reports in video format. Mr. Zahn is routinely involved in video planning, script writing, voiceover, graphics editing, and video editing. Many of the videos Mr. Zahn produces are available on our clients' websites and on YouTube.

Mr. Zahn has led quality assurance activities on a wide range of STI projects, including AirNow, AirNow-Tech, and Village Green, as well as on several air quality outreach websites and mobile apps. These activities include test planning, test execution, and coordination among developers, subject matter experts, and project managers. He has also worked to implement standard procedures and best practices for test planning, execution, documentation, tracking, and follow-up.

From 2002 to 2006, Mr. Zahn was a research assistant at the University of Washington, where he researched regional climate change in the Pacific Northwest using a mesoscale meteorological model. He also served as a teaching assistant for an introductory class on climate change. In 1999, Mr. Zahn was an intern at the Geophysical Fluid Dynamics Laboratory in Princeton, New Jersey. During his time there, he performed statistical analyses, including wavelet analysis, to determine how the El Niño Southern Oscillation's intensity and frequency have changed over time.

Mr. Zahn is skilled with the Adobe Creative Suite (including Premiere, After Effects, Photoshop, Soundbooth, and Illustrator); Microsoft Excel, PowerPoint, and Access; ArcGIS; SYSTAT; and MATLAB.

Education

- MS, Atmospheric Science, University of Washington
- BSE, Environmental Engineering, magna cum laude, Princeton University

Certifications

- Certified Tester, Foundation Level (CTFL) by the American Software Testing Qualifications Board (ASTQB)

For a list of publications, see sonomatech.com/ResPub/PHZpub.pdf.