

KENNETH J. CRAIG
Atmospheric Modeler II



Educational Background

M.S., Meteorology, San Jose State University
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Professional Experience

Mr. Craig joined STI as a member of the Atmospheric Modeling group in 2005. He is involved in all aspects of meteorological and air quality modeling projects at STI, including acquisition, preparation, and quality control of modeling inputs, model execution, model performance evaluation, model development, and the analysis and visualization of model outputs. Since joining STI, Mr. Craig has been involved in numerous air quality modeling projects. For the Central California Ozone Study (CCOS) he performed sensitivity simulations to study ozone aloft model performance. For the California Regional PM₁₀/PM_{2.5} Air Quality Study (CRPAQS), he performed inert tracer experiments to assess the role of transport, diffusion, and plume rise during wintertime pollution episodes. Mr. Craig has contributed to several additional modeling projects, including the U.S. Minerals Management Service (MMS) Breton Island Increment Analysis, an Ozone Modeling Analysis for the City of Albuquerque, and modeling analyses of residential wood burning curtailment strategies and regional wood smoke contributions for the Sacramento Metropolitan Air Quality Management District.

Mr. Craig has recently been involved in the development and implementation of integrated smoke prediction systems for the U.S. Forest Service (USFS). Mr. Craig implemented the BlueSky Gateway Modeling System, which combines existing meteorological and air quality models with custom fire location software and the USFS BlueSky Framework to produce real-time forecasts of smoke impacts on a national scale. For the development of the Air Quality Impacts Planning Tool (AQUIPT), he extended the BlueSky Framework to use an ensemble modeling approach to estimate climatological impacts of proposed prescribed burn programs.

Mr. Craig also has experience processing and analyzing large geophysical data sets. For the U.S. Environmental Protection Agency (EPA) Multi-pollutant Report, he developed algorithms to process and analyze 10 years of meteorological data for over 600 United States observation sites. He developed a process to create daily National Oceanic and Atmospheric Administration (NOAA) HYSPLIT trajectories at those sites for all 10 years. Mr. Craig also developed algorithms for preparing 27 years of North American Regional Reanalysis (NARR) data for use in the AQUIPT and other analysis and modeling applications. Recently, Mr. Craig implemented an algorithm to calculate wildfire smoke aerosol optical depth over Southern California from several months of Moderate Resolution Imaging Spectroradiometer (MODIS) satellite data.

Mr. Craig also supports STI's Forecasting Services and Public Outreach group. He develops and maintains applications that process NOAA-EPA ozone model forecast data to generate city-specific guidance for use by air quality forecasters nationwide through the EPA AIRNow Forecast Submittal System.

Prior to joining STI, Mr. Craig worked as a research assistant at San Jose State University (SJSU) and Pennsylvania State University (PSU). At SJSU, Mr. Craig used a meteorological model to study the linkage between urban heat islands and convective initiation. At PSU, Mr. Craig was involved with the International H₂O Project (IHOP) and gained expertise in airborne LIDAR data interpretation, analysis, and visualization. Mr. Craig also taught undergraduate lecture and lab courses in meteorology and atmospheric physics.

Mr. Craig has a strong computer background and is skilled in FORTRAN, Python, IDL, UNIX, and the Microsoft Office Suite.

Memberships

American Meteorological Society