GREGORY MARK STELLA
SENIOR SCIENTIST
ALPINE GEOPHYSICS, LLC

387 Pollard Mine Road
Burnsville, NC 28714
828-675-9045
gms@alpinegeophysics.com

EDUCATION:

B.S. Chemical Engineering, The Johns Hopkins University, Baltimore, Maryland, 1992.

PROFESSIONAL EXPERIENCE:

Senior Scientist and Managing Partner, Alpine Geophysics, LLC, Burnsville, NC, 2003-Present.
Emissions Specialist, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, 1997-2003.
Chemical Engineer, E. H. Pechan & Associates, Inc., 1993-1997.
Associate, Hampshire Research Associates, Inc., 1992-1993.
Research Assistant, Department of Chemical Engineering, The Johns Hopkins University, 1991-1992.

FIELDS OF EXPERIENCE

Mr. Stella is internationally recognized as a technical authority in the planning, design, development, evaluation, application, and modeling of local, national, and international emission inventories. His focus is on the policy options used for the projection and control of ozone and particulate matter pollutants and precursors. He has coordinated with Federal, State, Regional, Local, International, Tribal, and private workgroups, modeling centers, and stakeholders to develop, evaluate, and apply alternative control measures and control program designs in support of emissions and air quality analyses.

In September 2011, Mr. Stella was invited by and provided testimony before the U.S. House of Representatives Committee on Space, Science and Technology regarding work conducted by Alpine Geophysics in modeling the Cross-State Air Pollution Rule (CSAPR), including a discussion of analyses related to recent technological and air quality changes, and corresponding attainment results for federal ozone and particulate matter standards. Additionally, in October 2006, Mr. Stella presented information in Beijing, China to the Task Force on Hemispheric Transport of Air Pollutants under the Convention on Long-Range Transboundary Air Pollution relevant to national efforts to assess the impacts of intercontinental transport.

Prior to joining Alpine in 2003, Mr. Stella was at on staff at EPA's Office of Air Quality Planning and Standards where he managed and prepared the emission inventories, control strategies, and associated temporal, spatial and speciation data for the Regional Transport NOx SIP Call, Section 126 rulemaking, Tier-2 tailpipe standards, 1-hour attainment demonstrations, Heavy-Duty Diesel Engine standards, Multi-Pollutant legislation, Clear Skies Analysis, and US/Canadian Air Quality Agreements.

For his efforts while at EPA, Mr. Stella received two U.S. EPA Gold Medals, for the NOx SIP Call Rulemaking (1999) and the Tier-2 Tailpipe Standard (2001) as well as a U.S. Department of Justice Certificate of Commendation for working with the Environment and Natural Resources Division (2000) and multiple Bronze Medals for Commendable Service.

Emissions Inventory Development, Evaluation, Application, and Coordination

Mr. Stella is currently managing a project to process EPA's NAAQS NODA 2023 projection year modeling platform and execute CAMx and associated source apportionment tools for ozone. The project will develop a future year culpability assessment using OSAT/APCA and updated incremental studies. Additional modeling will be conducted including 4km simulations from the 2023 platform and control and sensitivity simulations to be determined.

Mr. Stella is currently managing a project that provides support to an 8-hr Coalition in the State of Texas in their efforts to construct input to the SIP that TCEQ will develop in response to the current 8-hr ozone NAAQS. This project is unique in that instead of just following the prescriptive EPA guidelines for SIP modeling, the study team is adapting and developing new ensemble meteorological, air quality and emissions modeling methods in order to perform a probabilistic attainment test. The project involves ensemble modeling (emissions and meteorology), addresses model performance, models the direct attainment test period, and performs EPA guidance attainment test procedures.

Mr. Stella is currently participating in a number of projects related to the contribution of background ozone and international transport on domestic receptor ozone concentrations. Using source apportionment techniques, he is qualifying and quantifying the location and amount of ozone that impacts attainment at monitors in the continental United States.

Mr. Stella recently completed a project developed to conduct modeling analyses to aid in assessment of EPA's proposals for Model Emission Rate for Precursors (MERPs) for ozone and PM2.5.

Mr. Stella managed a project that developed a 2011 base year modeling platform covering the national 36km domain that was used in eastern State attainment and source receptor modeling. The project incorporated the latest onroad mobile source emissions using the MOVES model, including most current RPO base year emissions and input data, monitors RPO modeling efforts and prepared source-receptor modeling for 12km modeling domain.

Mr. Stella completed multiple projects designed to conduct Ozone Source Apportionment Technology (OSAT) simulations using the Environmental Protection Agency's (EPA) 2017 base case projection year modeling platform from the Cross-State Air Pollution Rule (CSAPR) and associated post-processing presentations for the development of region and source-category specific relative contribution of upwind sources on downwind receptors and design values.

Mr. Stella completed a project designed to obtain, prepare, investigate and present visibility trends and the potential of wildfire smoke plumes on low visibility days in calendar years 2010-2014 for multiple Class I areas.

Mr. Stella participated in a project conducting both regional and local scale modeling to assess the impact of local and regional scale emissions on the residual non-attainment at monitors in the Liberty/Clairton nonattainment area of Allegheny County, Pennsylvania. Alpine developed ozone and PM precursor emission inventories, using the WRF mesoscale meteorological model, the SMOKE emissions model and the CAMx photochemical model to conduct this analysis.

Mr. Stella supported the Southeastern States Air Resource Managers, Inc., (SESARM) by providing assistance in the development of the emission inventories to support required modeling analyses, control strategy assessments, and other air quality management needs for States in the southeastern modeling domain. This project was designed to support technical air quality analysis projects which included compilation and analysis of existing ambient air quality monitoring data, collection of additional monitoring data as needed, assessment of air quality trends, preparation of emission inventories, development of emissions control scenarios, modeling of meteorology, emissions, and air quality, and completion of reports revealing the impact of emissions and the air quality benefits of varying emission control levels.

Mr. Stella was recently part of a team under contract with the Mid-Atlantic Regional Air Management Association (MARAMA) to develop emission inventories in the Mid-Atlantic and Northeast region. As part of this project, he assisted in developing and/or updating regional emission inventories for the northeastern United States to support required modeling analyses, control strategy assessments, and other air quality management needs. The regional inventory will be used to concurrently address national ambient air quality standard (NAAQS) requirements for the new ozone and fine particle ambient standards and to evaluate progress towards long-term regional haze goals.

Mr. Stella completed a project designed to develop a set of data of expected pollutants by source category for use in EIS to quality assure and analyze emissions data for inclusion into the NEI. This data set was also to be used to inform those preparing emission data for submission to the NEI of the pollutant coverage expectations and what EPA would be using for emission factors for its own estimates.

Mr. Stella recently participated in a project for the Lake Michigan Air Director's Consortium (LADCo) designed to revise the emissions and modeling inventory for marine vessels on the Great Lakes and major Midwest rivers. The goal of the project was to update the existing emissions inventory for marine vessels using a most recent year baseline. The project included coordinating with stakeholders who may include shipping companies and the Lake Carriers' Association.

Mr. Stella conducted a peer review of the 2009 Christchurch inventory on emissions to air as prepared by Environment Canterbury of New Zealand. This peer review involved the identification of major sources discharging contaminants to air, provided estimates of the quantities emitted, and determines relative contributions to total emissions. For pollutants such as PM10, major source categories included domestic home heating, motor vehicles, and industry. It also provided a baseline from which future improvements could be evaluated, updated source information and reassessment of the relative source contributions to emissions.

Mr. Stella was recently under contract to the Visibility Improvement - State and Tribal Association of the Southeast (VISTAS) regional planning organization (RPO) as Technical Advisor for Emission Inventories and provided expertise in the inventory planning and decision phases supporting emissions and air quality modeling for ozone, fine particulate matter and visibility. Included with this expertise was a thorough understanding of emission inventory development methods, emission and activity factors for multiple source categories, methods for temporal and spatial allocation and speciation of emission inventories, and knowledge with various emission processors used to drive chemical transport models. As part of the Technical Advisor role, Mr. Stella was responsible for the oversight and management of multiple contractors currently developing base year and future year forecasts of emissions related activity data with models such as IPM®, MOBILE6.2, NONROAD, NMIM, the CMU NH3 emissions model, and others.

Mr. Stella assisted in the meteorological, emissions and photochemical modeling necessary to develop an 8-hour ozone early action compact (EAC) SIP attainment demonstration for the Denver Regional Air Quality Council (RAQC) and Colorado Department of Public Health and Environment (CDPHE) and to further examine the potential effects of the new 8-hour ozone NAAQS.

Mr. Stella participated in a project designed to address the Birmingham local- and regional-scale PM2.5 attainment demonstration modeling requirements. This project, sponsored by the Jefferson County Department of Health (JCDH) and Alabama Department of Environmental Management (ADEM), included the development of multiple modeling databases and associated analysis necessary to demonstrate attainment of the PM2.5 standard accounting for both regional as well as local contributions.

Mr. Stella, acting as a co-PI, completed an analysis to prepare and implement a SIP Strategy Comprehension Plan (SSCP) describing the components of an integrated 8-hr ozone and annual $PM_{2.5}$ modeling study for the five-state Upper Midwest region. The aim of the SSCP was to develop a process allowing the Project Sponsors insight and assurance that best modeling practices are being utilized to identify effective emission reduction controls to address the residual nonattainment issues in this region and that if alternate and credible information are

developed independently outside of the scope, timelines, or budgets of the RPO recommendation process that these data are introduced to the States in a constructive manner for consideration in SIP development timelines.

Mr. Stella recently fulfilled a contract to Mid-Atlantic Regional Air Management Association (MARAMA) to provide revision, analysis, and adjustment of the 2002, 2009, 2012, and 2018 base case and control scenario emission estimates for the MANE-VU region.

Mr. Stella participated in a project intended to identify potential sources of greenhouse gas emissions. The contract team was requested to comprehensively identify source categories and sources of greenhouse gases, including CO2, methane, and nitrous oxides, that emit less than 10,000 tons per year CO2 equivalent, but more than the 250 ton per year NSR major source threshold. The team was also to estimate, for each identified source category, the existing nationwide population of the identified emissions units or sources, and project the future number of new sources in each source category over the next 5 years.

Mr. Stella completed an analysis which compared EPA's National Emission inventory and other available national and regional emissions inventories to available global emissions inventories and created comparable datasets that could be used in further modeling and analysis. This effort contributed to the U.S. Environmental Protection Agency Office of Air and Radiation participation in the Task Force on Hemispheric Transport of Air Pollutants under the Convention on Long-Range Transboundary Air Pollution and similar efforts to assess the impacts of intercontinental transport.

Under contract to EPA, Mr. Stella participated in an assignment whose objective was to redesign EPA's existing AirControlNET software so that it would meet current and future needs for modeling the emission reductions and costs associated with emissions reductions while also interfacing with new tools and databases currently under development. This assignment consisted of multiple tasks including assessing current performance of AirControlNET and preparation of recommendations for improvements, finalizing recommendations for the redesign of ACN, and creation of a new version of AirControlNET (CoST).

Mr. Stella was part of an analysis conducted by Alpine Geophysics, LLC aimed at providing support in the design and configuration of regional haze emissions reduction strategies for CENRAP/CENSARA. This analysis was configured to accomplish the following objectives: analyze existing regional haze modeling inventories developed by CENRAP, the States, and other RPOs; synthesize available and pertinent air quality and meteorological data and recent 'attribution of haze studies' by CENRAP and the other RPOs; review 2018 RPG modeling by CENRAP and other RPOs to identify the key Class I areas for which additional emissions reductions may be needed; develop a prioritized set of regional and subregional precursor control scenarios aimed at achieving the RPG at the CENRAP Class I areas; and monitoring of the initial 2018 control strategy modeling performed by the CENRAP modeling team to ascertain whether subsequent strategies need to be refined or new strategies developed.

Mr. Stella participated as co-principal investigator for the emissions modeling quality assurance and quality control for the Missouri Department of Natural Resources to provide air quality consulting services for the St. Louis 8-hr ozone and $PM_{2.5}$ air quality modeling study. He was the task leader in this project related to aspects of researching and compiling the growth and control factors for regional control strategies to meet the air quality objectives of the study.

Mr. Stella was under contract to the U.S. EPA in an emissions inventory study whose purpose was to acquire the emissions related data necessary to perform a comparison of the draft 2002 NEI, the EPA 2001 modeling platform EI, and up to five individual RPO 2002 base year emission inventories and ancillary data. This project involved the conversion, quality assurance, and direct and indirect comparison of various emission inventories from a variety of formats (NIF, RPO Data Exchange, SMOKE IDA).

Mr. Stella participated in the peer review of the HgCAMx model and associated emission inputs sponsored by the Wisconsin Department of Natural Resources (WDNR). As part of this review, the inventories used in WDNR's mercury assessment were compared to the latest versions of related inventories and other comparable inventory

data and comments were prepared on the relative appropriateness of each based on recent advancements in the state-of-knowledge of mercury emissions. Additionally, Mr. Stella's experience in the development, review, and quality assurance of mercury data used in EPA multi-pollutant legislative modeling augmented the assessment of these data on a larger national and international scale.

Mr. Stella was an active participant in the annual development and quality assurance of the National Emission Inventories (NEI) and the NEI Input Format (NIF) while at U.S. EPA's Emission Factor and Inventory Group (EFIG) of the Office of Air Quality, Planning, and Standards (OAQPS). As an emissions modeling specialist, Mr. Stella was primarily responsible for the evaluation, modification, and augmentation of the NEI for purposes of its use in emissions and air quality modeling studies. He was also designated as OAQPS' primary emissions modeling liaison to other U.S. EPA Offices, International, Regional, Local, and Tribal agencies, and private workgroups.

Mr. Stella was co-chair of both the Projections and Emissions Modeling Committees of U.S. EPA's Emission Inventory Improvement Program (EIIP). As co-chair of these workgroups, he addressed the needs of local, state, and regional agencies by providing guidance on options for forecasting future emissions and by developing improved temporal, spatial, and speciation profile information to be used in emissions modeling analyses. The Projections Committee examined alternatives for projecting emissions changes into the future and developed a list of recommended approaches for applying specific forecasting indicators. The goal of the Emissions Modeling Committee was to identify and prioritize needed improvements to the current methods of developing emissions modeling allocation factors, and to collect and use data to improve existing allocation factor files increasing confidence in air quality modeling results.

Mr. Stella participated in the review and development of the Regional Planning Organizations' (RPO) emissions inventory data exchange protocols. The RPOs are working to generate data exchange protocols for the many types of data the RPOs will share in upcoming emissions and air quality modeling exercises. The intent is to create a common "language" of data exchange related to anthropogenic and biogenic emissions, temporal, spatial, and speciation modeling data, and growth and control information.

Mr. Stella participated in the review and assessment of multiple regional organization (SAMI, WRAP, OTC, etc.) emission projection and reduction strategies and analysis reports and has worked with these organizations to help them better understand the strategy implications and coordination with national regulation.

Mr. Stella has been an active participant in many North American inventory activities. As OAQPS' Canadian emissions modeling liaison, he participated from 1998 through 2003 as primary author to the emission inventory section of the U.S.-Canada Air Quality Agreement Update reports and acted as the sole U.S. participant in Environment Canada's Emissions and Projections Working Group and Criteria Air Contaminants Speciation Technical Committees. He has most recently been involved with the integration of U.S. and Canadian emission inventories for 1996, 2010, and 2020 to be used in the assessment of transboundary contributions of particulate matter emissions.

Mr. Stella participated in stakeholder meetings involved with the revision to Canada's National Pollutant Release Inventory (NPRI) which achieved the objectives of (1) including Criteria Air Contaminants for the 2002 reporting year, (2) reporting thresholds being set appropriately to capture a minimum of 80% of emissions from reporting sources, and (3) completion of the initiative which resulted in the future publication of a Canadian annual emissions inventory.

Mr. Stella participated as U.S. representative to the North American Commission for Environmental Cooperation's (CEC) *Air Without Borders—Laying the Foundation for North American Air Emissions Inventories* workshop where he promoted new initiatives related to the reporting of Canadian, Mexican, and U.S. emissions and modeling data that would allow international comparison for purposes of public outreach, emission trends reporting, fulfilling data requests, control strategy application studies, benefit analyses, and estimating air quality in large regional areas.

Mr. Stella has provided management, emissions, and modeling support to other international activities including cooperative air quality efforts undertaken by the Binational Advisory Committee (BAC), the Convention on Long-Range Transboundary Air Pollution (LRTAP), New England Governors and Eastern Canadian Premiers, Canada-U.S. Georgia Basin Ecosystem Initiative, North American Research Strategy for Tropospheric Ozone (NARSTO), Intercontinental Transport and Climatic Effects of Air Pollutants (ICAP) project, the Gothenburg Protocol, and the Northeast Regional Air Quality Committee.

Mr. Stella has broad experience in ozone SIP nonattinament analysis. He developed the Emission Reduction and Cost Analysis Model for NOx (ERCAM-NOx) used to analyze the costs and air quality impacts of alternative strategies for reducing NOx emissions. Mr. Stella assisted in the development of the Ozone Transport Commission (OTC) NO_x Baseline Inventory for use in establishing an emission budget for the Northeast States. He assisted in the development of a national inventory of particulate precursors for a study of ambient concentrations and exposure of PM_{10} and fine particulates and in a study of the impacts of NO_x air pollutant control measures on nitrogen loading in the Chesapeake Bay.

Mr. Stella, under Interagency Agreement (IAG) with the U.S. Department of Agriculture, National Forest Service, reviewed Forest Service inventory documents for the Southeastern region's participation in air quality attainment strategies. This included the investigation of potential sources of Forest Service data as they related to coordinated federal agency needs of improved fire and Forest Service specific activity and emissions data. He coordinated with Region 8 Forest Service staff in SAMI inventory and projections projects and was co-developer of the SAMI Emissions and Mapping Query Tool. Under this IAG, Mr. Stella provided assistance to regional Forest Supervisors in their development of smoke management plans.

Emissions Inventory Modeling

Mr. Stella participated on a contract with U.S. Environmental Protection Agency Region 8 who required environmental consulting support services for the development of a Regional Haze FIP for the state of Montana. Under this contract, Alpine developed information to be used in the Technical Support Document and/or docket to support the FIP. The contract included air quality dispersion modeling results and related documentation and had three main objectives; apply the CALMET meteorological model to provide inputs to the CALPUFF modeling; apply the CALPUFF modeling system to estimate the baseline impacts from up to eight sources on Class I areas within 300km of the source; and to apply the CALPUFF modeling system for up to 80 emissions control cases to assess the air quality impacts of potential control measures.

Mr. Stella participated on a contract with the Bureau of Land Management (BLM) for a "Utah BLM Air Resources Management (ARMS) Modeling Project" (Project). Under this contract Mr. Stella provided support for photochemical grid modeling by assisting in the development of a project work plan and a modeling protocol, providing emissions inventory processing for several photochemical grid modeling runs and performing photochemical grid modeling runs.

Mr. Stella participated in a project designed to develop a transparent, coherent, standalone modeling system based on CONCEPT that can quickly incorporate emissions changes due to the use of blended fuels in on-road engines, with various ethanol contents into an overall CAMx-ready emissions inventory – where CAMx is scripted to be subsequently applied as part of the model "suite."

Mr. Stella participated under contract to VISTAS as part of the emissions and air quality modeling team where he was responsible for obtaining emissions inventory data necessary to support national annual 2002 and future year regional haze, particulate matter, and ozone modeling and recommend source of emissions data to be used for Canada and Mexico. In his role as Emissions Gatekeeper he was also responsible for the quality assurance of all emissions data received, consistent with the VISTAS approved quality assurance plan and for the development of all emissions modeling files to support modeling runs for 2002 and future year scenarios. As Gatekeeper he also developed the chemical speciation files and temporal and spatial allocation files necessary to convert annual inventories into hourly and daily emissions modeling files. He also developed all emissions modeling input files in a

variety of formats (NIF, IDA, RPODx) for VISTAS and non-VISTAS states in order to support modeling runs for future year base case and emissions strategies as defined by VISTAS.

Mr. Stella conducted an analysis with the objective of providing supporting information to allow EPA to make a science-based recommendation using modeling tools during their development of a nonattainment area classification strategy based on the most recent national photochemical modeling rather than the mathematical ratio method used in the previous 2004 8-Hour Ozone Implementation Rule. To accomplish this goal, he utilized the most current national EPA modeling data bases for 2002, 2009, 2014, 2020 and 2030 to estimate the 'glide paths to attainment' for all designated nonattainment in the eastern U.S., providing attainment year estimates and grouping these areas into definable categories or "bins" and developing statistical comparisons and defined more refined analyses that could be employed by EPA to classify the nonattainment areas based on these results.

Mr. Stella recently developed the protocols for the growth and control modules of the Consolidated Community Emissions Processing Tool (CONCEPT). These modules were designed to have the capability of applying growth and control factors in a hierarchical fashion, from a general, state specific factor, to one specific to a particular facility/SCC/pollutant combination. Additionally, the conceptual design of an advanced least cost control module was developed by Mr. Stella and is expected to be implemented in the next phase of CONCEPT development.

Mr. Stella was contracted by U.S. EPA to develop the SMOKE formatted growth and control packets necessary to develop the future year emission inventories in support of the Clean Air Interstate Rule (CAIR). As part of this contract, Mr. Stella researched available national, regional, and local control strategies and programs and converted them into the packet format required by the SMOKE emissions model. Under a similar contract, Mr. Stella converted EPA's NEI in NIF 3.0 and NMIM output formats into the SMOKE IDA inputs required by the model. This conversion included the development of scripts and procedures necessary to take various temporal and spatially allocated emissions files and process them for EPA's modeling system and configuration requirements.

Mr. Stella managed, prepared, and participated in the modeling of the emission inventories, growth and control strategies, and associated temporal, spatial, and speciation data for EPA's Regional Transport NOx SIP Call, Section 126 rulemaking, Tier-2 tailpipe standards, 1-hour ozone attainment demonstrations, Heavy-Duty Diesel Engine standards, Multi-Pollutant legislation, Clear Skies Initiative, Nonroad Diesel Engine proposed rule, Clean Air Interstate Rule (CAIR), U.S./Canadian Air Quality Agreements, and Clear Air Mercury Rule (CAMR) which used the Emissions Processing System (EPS 2.x), Emissions Modeling System (EMS-95), and Sparse Matrix Operator Kernel Emissions (SMOKE) emissions models.

Mr. Stella initiated and directed EFIG's Emissions Modeling Team, whose primary goal was to improve the state of knowledge of emissions inventories for modeling purposes. This team was responsible for the quality assurance and augmentation guidelines currently in practice by U.S. EPA in the development of the annual NEI.

Mr. Stella recently managed the development of revised temporal and spatial profiles and source category associations for national stationary area and nonroad mobile source emissions intended to reduce the uncertainty in air quality modeling results. These enhancements complement earlier work by Mr. Stella which improved the spatial distribution of highway vehicle emissions and vehicle miles traveled (VMT) to grid based modeling domains.

Mr. Stella was an active participant in the oversight of recent modifications made to the SMOKE modeling system. These modifications include the incorporation of the U.S. EPA's Office of Transportation and Air Quality (OTAQ) MOBILE6 model and modules which allow the integrated processing of multi-pollutant (criteria and toxics) emissions. With these changes, users are able to run EPA's latest highway mobile source emission factor processing model (MOBILE6.2) and will be able to import both criteria and toxic pollutant inventories, combine them, and output model-ready emission data that contain all emissions selected for modeling by the user. These functions allow SMOKE to support air quality modeling of criteria and toxic pollutants with the Community Multiscale Air Quality (CMAQ) model and the Regulatory Modeling System for Aerosols and Deposition (REMSAD).

Training

Mr. Stella has been the instructor for the *Emission Inventory Preparation for Modeling* course at many of the annual emissions inventory conferences sponsored by U.S. EPA's Emission Factor and Inventory Group. These training sessions provided a background into the development of emissions inventories suitable for emissions modeling and outlined the steps and stages involved with emissions modeling activities. Key topics of discussion involved the completeness, temporal and spatial allocation, speciation, and growth and control of mass emission inventories.

Mr. Stella was responsible for presenting to various State and Regional organizations information on the development and calculation of emissions and budgets for base and future year inventories during the Regional Transport NOx SIP Call rulemaking.

Mr. Stella was involved in the development of a project designed to demonstrate the benefit of a comprehensive air quality management system on air pollution problems in urban areas in India. The goal of the project was to give groups in India the training and assistance needed to develop a modeling quality emissions inventory for particulate matter, prepare air dispersion model scenarios, and develop control strategies for selected cities based on the results of the inventory and modeling work.

PROFESSIONAL SOCIETIES:

Air and Waste Management Association

SPECIAL SKILLS, ACCOMPLISHMENTS, AND AWARDS:

U.S. EPA Gold Medal for Exceptional Service – Tier-2 Tailpipe Standard (2001)
U.S. EPA Gold Medal for Exceptional Service – NOx SIP Call Rulemaking (1999)
U.S. EPA Bronze Medal for Commendable Service – Clear Skies Initiative (2003)
U.S. EPA Bronze Medal for Commendable Service – Innovation and Initiative in Development of Systems and Practices for the Acquisition, Management, and Delivery of Air Pollutant Emissions Data for Air Quality Management and Accountability (2003)
U.S. EPA Bronze Medal for Commendable Service – Emission Inventory Improvement Program (2001)
U.S. EPA Bronze Medal for Commendable Service – Section 126 Rulemaking (2001)
U.S. Department of Justice Certificate of Commendation – Environment and Natural Resources Division (2000)
Multiple public presentations and instruction on emissions and air modeling and strategy application.

Fluent programmer in FORTRAN, dBase, Visual Basic, and FoxPro.
Experienced with Windows, Oracle, UNIX, and Linux operating systems.
Background with JAVA, PERL, and SAS.

TESTIMONY AND PUBLICATIONS:

Congressional Testimony

Stella, G.M., "Written Testimony before the U.S. House of Representatives Committee on Space, Science and Technology," September 15, 2011.

Company Reports (selected):

McNally, D., C. Loomis, G. Stella, "Ethylene source attribution modeling in the Greater Houston area," submitted for publication, Atmospheric Pollution Research, April 2017.

Stella, G.M., "Relative Contribution of Upwind Sources on Key Monitors 176A Petitioning and Petitioned States Using CSAPR 2017eh Modeling Platform," prepared for Midwest Ozone Group, February 2017.

Stella, G.M., "Relative Impact of State and Source Category NOx Emissions on Downwind Monitors Identified Using the 2017 Cross State Air Pollution Rule Modeling Platform," prepared for Midwest Ozone Group, January 2016.

Stella, G.M., "Impact Analysis of Pennsylvania RACT II Rule on Downwind Monitor Ozone Concentrations," prepared for Midwest Ozone Group, January 2016.

Stella, G.M., "Source Apportionment Scenario Modeling Results and Comparison to the 2017 Cross State Air Pollution Rule Modeling Platform," prepared for Midwest Ozone Group, January 2016.

Stella, G.M., "Review of CAMx HMAX Configuration in Cross State Air Pollution Rule Air Quality Modeling," prepared for Midwest Ozone Group, January 2016.

Stella, G.M., "Model Performance Review at Monitors with Complex Meteorology Land-Water Interfaces," prepared for Midwest Ozone Group, January 2016.

Stella, G.M., "Independent, Sector-Specific Source Apportionment Modeling of the 2017 Cross State Air Pollution Rule Modeling Platform," prepared for Midwest Ozone Group, January 2016.

Stella, G.M., "NOx Emissions and Rate Comparison Data Ozone Season NOx Emissions and Rates - Units with Lowest Historical Ozone Season NOx Emissions Exceeding CSAPR Proposed Budget Allocations," prepared for Midwest Ozone Group, January 2016.

Stella, G.M., "CSAPR Documented Emission Reductions, Integrated Planning Model Control Scenarios, and Associated Nonattainment Ozone Changes," prepared for Midwest Ozone Group, January 2016.

Stella, G.M., "Alternate Design Value Calculation and Attainment Demonstration," prepared for Midwest Ozone Group, January 2016.

Stella, G.M., "Current Ozone Design Values and Widespread Attainment of the 2008 8-hr Ozone NAAQS," prepared for Midwest Ozone Group, January 2016.

Stella, G.M., "Recent Regional Emissions and Air Quality Trends – The News Improves!, prepared for Midwest Ozone Group, September 2013

Stella, G.M., B. Comer, J. Corbett, J. Silberman, "Commercial marine emissions in the LADCO region final report: 2010 base year with projections to 2020 and 2030," prepared for Lake Michigan Air Directors Consortium, 2011.

Stella, G.M., T. Stoeckenius, et. al., "Attainment Modeling and Design Value Analyses for 8-hr Ozone and PM2.5 Attainment Demonstrations in the Midwestern and Northeastern United States," prepared for Midwest Ozone Group, September 2010.

Stella, G.M., C. Emery, et. al., "Technical Support Document; Modeling to Support the Birmingham, Alabama Annual PM2.5 State Implementation Plan," prepared for Alabama Department of Environmental Management and Jefferson County Department of Health, January 2009.

Stella, G.M., "8-hr Ozone Attainment Glide Path Analysis in the Eastern United States," prepared for ExxonMobil Refining & Supply Company, January 2009.

Stella, G.M., R. Morris, et. al., "Technical Support Document for the Association for Southeastern Integrated Planning (ASIP) Emissions and Air Quality Modeling to Support PM2.5 and 8-Hour Ozone State Implementation Plans," prepared for Pat Brewer, ASIP Technical Coordinator, December 2008.

Stella, G.M., J. McDill, "Documentation of 2018 Emissions from Electric Generating Units in the Eastern United States for MANE-VU's Regional Haze Modeling; Revised Final Draft," prepared for Mid-Atlantic / Northeast Visibility Union, April 2008.

Stella, G.M., "Reconciliation and Comparison of Regional and Global Emission Inventories," prepared for U.S. EPA, Office of Air and Radiation, September 2006.

Stella, G.M., T.W. Tesche, J. Wilkinson, "CENRAP Regional Haze Control Strategy Analysis Plan," prepared for CENRAP/CENSARA, April 2006.

Stella, G.M., "Technical Memorandum: AirControlNET (ACN) Software Redesign: Assessment of Functionality and Limitations," prepared for U.S. EPA, Office of Air Quality Standards and Planning, December 2005.

Stella, G.M., R.W. Morris, B. Koo, T.W. Tesche, C. Loomis, G. Tonnesen, and Z. Wang. "Second Draft Report— VISTAS Emissions and Air Quality Modeling— Phase I Task 6 Report: Modeling Protocol for the VISTAS Phase II Regional Haze Modeling", prepared for VISTAS, prepared by ENVIRON International Corporation, Novato, CA, Alpine Geophysics, LLC, Ft. Wright, KY, and UC Riverside, Riverside, CA. 2004.

Stella, G.M., T.W. Tesche, C. Loomis, D. McNally, J. Wilkinson, "Scientific Peer-Review of the Hg-CAMx Atmospheric Mercury Model and Its Application to the 2002 Annual Cycle," prepared for Wisconsin Department of Natural Resources, Mercury Modeling Team, prepared by Alpine Geophysics, LLC, Arvada, CO, April 2004.

Stella, G.M., J. Bernard, W. Jackson, J. Konwinski, "Description of the Spatial, Graphical, and Tabular Data Sets From the Southern Appalachian Mountains Initiative (SAMI)," prepared for SAMI Technical Workgroups and Stakeholders, December 2002.

Stella, G.M., J.H. Wilson, Jr., S. Roe, M. Cohen, and R. Coleman, "Control Measure Evaluations Prepared for Southeast Pennsylvania Ozone Stakeholders Group," Air Quality Development Support to the Pennsylvania Department of Transportation, March 1997.

Stella, G.M., J.H. Wilson, Jr., E.J. Laich, and R.D. Coleman, "Benefits of the Open Market Trading Rule for Ozone Smog Precursors - Draft Report," prepared for U.S. Environmental Protection Agency, Innovative Strategies and Economics Group, March 5, 1996.

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