

THOMAS P. WENZEL

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EDUCATION

GRADUATE SCHOOL OF PUBLIC POLICY, UNIVERSITY OF CALIFORNIA, BERKELEY
Master of Public Policy, May 1992.

UNIVERSITY OF PENNSYLVANIA, Philadelphia, PA.
Bachelor of Arts, Urban Studies and English Literature, December 1985.

WORK EXPERIENCE

ENERGY ANALYSIS DEPARTMENT, LAWRENCE BERKELEY NATIONAL
LABORATORY, Berkeley, CA.

Principal Investigator	July 2006 to present
Research Scientist/Engineer	February 2001 to present
Scientific Engineering Associate	February 1995 to February 2001
Senior Research Associate	August 1992 to February 1995
Graduate Student Research Assistant	June 1991 to August 1992

Analyzed the relationship between vehicle weight, footprint, and risk, by vehicle type and make/model, using national fatality data and data on police-reported crashes from several states, for US DOE. Used logistic regression modeling to estimate the effect of reductions in vehicle mass or footprint on fatality and casualty risks, for federal regulations on new vehicle fuel economy and tailpipe greenhouse gas emission standards. Prepared two reports for release with the NPRM and final rule for new standards for model year 2017 to 2025 light-duty vehicles.

Managed the development of a website for the California Energy Commission's *Energy Aware Planning Guide*, a resource to provide guidance to cities and counties in reducing energy use from their transportation systems.

Assigned California CO₂ emissions from transportation modes to counties. Assessed uncertainties in estimates of fuel use by transportation modes in the California Energy Balance database. Estimated CO₂ emissions from congressional office travel between Washington DC and district offices for the Greening the Capitol project. Analyzed the energy consumption and participation in energy efficiency programs of large industrial PG&E customers.

Analyzed trends in highway fatality statistics for the Energy and Hewlett Foundations. Studied the separate effect vehicle size and weight, and other driver and crash variables, have on occupant safety in various types of fatal crashes. Prepared a report presented to the National Academy panel considering changes to the Corporate Average Fuel Economy (CAFE) standards. Submitted comments on several National Highway Traffic Safety Administration (NHTSA) proposed rulemakings. Presented research findings to NHTSA, EPA, US congressional, and

California Air Resources Board staff. Published results in *Accident Analysis and Prevention*, *Physics Today*, *American Scientist*, and *The Physics of Sustainable Energy*. Secured over \$1.2 million in funding.

Assisted CEC on its program to institute a rolling resistance tire labeling system. Assigned California CO₂ emissions from transportation modes to counties and assessed uncertainties in estimates of fuel use by transportation modes in the California Energy Balance database. Estimated CO₂ emissions from congressional office travel between Washington DC and district offices, and utility use in Capitol office buildings, for the Greening the Capitol project. Analyzed the energy consumption and participation in energy efficiency programs of large industrial PG&E customers.

Performed several evaluations of the effectiveness of vehicle emission inspection and maintenance (I/M) programs in Arizona, California, Colorado, and Ontario, using a combination of program test results and on-road emissions measurements. Helped EPA draft a guidance document on how to use remote sensing data to evaluate I/M programs. For the California Inspection and Maintenance Review Committee, led a team of researchers that prepared a comprehensive evaluation of the California Enhanced Smog Check program. The evaluation made use of program test results, roadside emissions tests of randomly selected vehicles, and remote sensing measurements. Analyzed several aspects of the Arizona I/M program for the Arizona Department of Environmental Quality, and for Environmental Systems Products, Inc. Presented results at numerous conferences, workshops and meetings, including a National Academy panel considering methods to evaluate I/M programs. Secured over \$400,000 in funding.

For US EPA's Office of Transportation and Air Quality, collected and analyzed vehicle exhaust emission data from state vehicle programs. Constructed a database of matched IM240 and remote sensor readings of individual vehicles to evaluate the effectiveness of using remote sensing in I/M programs to identify the dirtiest and cleanest vehicles in the fleet. Examined failure rates by vehicle model to identify models with high and low failure rates. Analyzed average emissions by vehicle model year and mileage to revisit the emission deterioration curves in the MOBILE model. Secured \$200,000 in funding.

Successfully applied for internal Lab Director's funding to develop a transportation emissions research program in the Division. Analyzed the relationship between vehicle tailpipe emission data (obtained with remote sensors) and vehicle characteristics. Reviewed literature and attended conferences to understand the limitations of emission factor and vehicle activity models used to estimate regional air quality; obtained and used the latest versions of EMFAC and DTIM to better understand their limitations. Reviewed the impact of alternative pay-as-you-drive automobile insurance policies on the provision of automobile insurance. Wrote a technical assessment of hybrid electric vehicles and a summary of current LBNL research on components for such vehicles. Secured \$200,000 in funding.

COLLEGE OF ENGINEERING-CENTER FOR ENVIRONMENTAL RESEARCH AND TECHNOLOGY, Riverside, CA.

Senior Development Engineer.

November 1995 to October 1999

Assisted in the development of a modal emissions computer model based on detailed dynamometer testing of in-use vehicles (the Comprehensive Modal Emissions Model, or CMEM). CMEM is based on engine-out and tailpipe emissions measurements in real time (second-by-second) from a fleet of 350 recruited vehicles. CMEM models second-by-second vehicle emissions by technology/age group, over any drive cycle input into the model. Assisted in the characterization of high-emitting vehicles by identifying four types of high emitters (running rich, running lean, misfire, bad catalyst), using second-by-second measurements from the project. The distribution of each type of high emitter in the in-use fleet was then determined using Phoenix IM240 data. This analysis was incorporated into the high emitter module of CMEM. Also used the IM240 data from three states to validate CMEM-projected emissions over the IM240 drive cycle.

SPECIAL STRENGTHS

Excellent writing and editing skills. Skilled in various statistical, database, spreadsheet, and word-processing software programs on Windows, Macintosh, and UNIX platforms. Extensive experience manipulating very large (>1 GB) databases in SAS on UNIX. Served on two workgroups of the US EPA Mobile Sources Technical Review Subcommittee, and the Transportation Research Board's Committee on Transportation and Air Quality (A1F03).

Publications of Thomas P. Wenzel 6/17/2013

Refereed journal articles

Wenzel, Tom. 2013c. "The relationship between U.S. societal fatality risk per vehicle mile traveled and vehicle mass, by vehicle type and model." Submitted for publication in *Traffic Injury Prevention*.

Wenzel, Tom. 2013b. "The estimated effect of mass or footprint reduction in recent light-duty vehicles on U.S. societal fatality risk per vehicle mile traveled." Accepted for publication in *Accident Analysis and Prevention*.

Wenzel, Tom. 2013a. "The effect of recent trends in vehicle design on U.S. societal fatality risk per vehicle mile traveled, and their projected future relationship with vehicle mass." *Accident Analysis and Prevention*, 56:71-81.

Wenzel, Thomas P., and Marc Ross, 2005. "The effects of vehicle model and driver behavior on risk." *Accident Analysis and Prevention*, 37:479-494. LBNL-55417

Wenzel, Thomas P., Brett C. Singer, Robert Slott, and Donald H. Stedman, 2004. "Short-term emissions deterioration in the California and Phoenix I/M programs." *Transportation Research Part D*, 9:107-124. LBNL-52169.

Singer, Brett C. and Thomas P. Wenzel. 2003. "Estimated emission reductions from California's Enhanced Smog Check program." *Environmental Science and Technology*, 37:2588-2595. LBNL-52109.

Wenzel, Tom, 2003. "Use of remote sensing measurements to evaluate vehicle emission monitoring programs: results from Phoenix, Arizona." *Environmental Science and Policy*, 6:153-166. LBNL-50995.

Wenzel, Tom and Marc Ross, 2003. "Comment on 'Statistical modeling of vehicle emissions from inspection/maintenance testing data: an exploratory analysis.'" *Transportation Research Part D*, 8:69-71. LBNL-48061.

Wenzel, Tom, 2001. "Evaluating the long-term effectiveness of the Phoenix IM240 program." *Environmental Science and Policy*, 4:377-389. LBNL-48008.

Wenzel, Tom, 2001. "Reducing emissions from in-use vehicles: an evaluation of the Phoenix inspection and maintenance program using test results and independent emissions measurements." *Environmental Science and Policy*, 4:359-376. LBNL-48007.

Wenzel, Tom, Brett Singer, and Robert Slott, 2000. "Some issues in the statistical analysis of vehicle emissions." *Journal of Transportation and Statistics*, 3:2, 1-14. LBNL-46115.

Ross, Marc, Rob Goodwin, Rick Watkins, Tom Wenzel, and Michael Q. Wang, 1998. "Real world emissions from conventional passenger cars." *Journal of the Air and Waste Management Association*, 48: 502-515.

Barth, Matthew, Theodore Younglove, Tom Wenzel, George Scora, Feng An, Marc Ross, and Joseph Norbeck, 1997. "Analysis of Modal Emissions from a Diverse In Use Vehicle Fleet." *Transportation Research Record 1587*, National Academy Press, Washington: DC.

LBNL and other reports

Wenzel, Tom P. 2012b. *An Analysis of the Relationship between Casualty Risk per Crash and Vehicle Mass and Footprint for Model Year 2000-2007 Light-Duty Vehicles*. Final report prepared for the Office of Energy Efficiency and Renewable Energy, US Department of Energy. Lawrence Berkeley National Laboratory. August. LBNL-5697E.

Wenzel, Tom P. 2012a. *Assessment of NHTSA's Report "Relationships Between Fatality Risk, Mass, and Footprint in Model Year 2000-2007 Passenger Cars and LTVs"*. Final report prepared for the Office of Energy Efficiency and Renewable Energy, US Department of Energy. Lawrence Berkeley National Laboratory. August. LBNL-5698E.

Wenzel, Tom P. 2011c. *An Analysis of the Relationship between Casualty Risk per Crash and Vehicle Mass and Footprint for Model Year 2000-2007 Light-Duty Vehicles*". Preliminary report prepared for EERE, US DOE. December. LBNL-5695E.

Wenzel, Tom P. 2011b. *Assessment of NHTSA's Report "Relationships Between Fatality Risk, Mass, and Footprint in Model Year 2000-2007 Passenger Cars and LTVs"*. Preliminary report prepared for EERE, US DOE. September. LBNL-5696E.

Wenzel, Tom P. 2011a. *Analysis of Casualty Risk per Police-Reported Crash for Model Year 2000 to 2004 Vehicles, using Crash Data from Five States*. Final report prepared for EERE, US DOE, March. LBNL-4897E.

Wenzel, Tom, Samer Madanat, Nakul Sathaye, Betsy Morris, Kimberly Rudy, and Chris Long. 2010. *A Web-Based Portal for Information for Local Governments to Reduce Energy Use and Emissions from Local Transportation Systems*. Draft final project report prepared for the California Energy Commission, Public Interest Energy Research, contract number 500-99-013. November.

Wenzel, Tom, 2010. *Analysis of the Relationship Between Vehicle Weight/Size and Safety, and Implications for Federal Fuel Economy Regulation*. March, LBNL-3143E

Wenzel, Tom, 2009. "Comments on the *Joint Proposed Rulemaking to Establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards*, Docket No. NHTSA-2009-0059 and Docket No. EPA-HQ-OAR-2009-0472," October 27, LBNL-3484E.

Wenzel, Tom, 2008. "Vehicle Emission Inspection and Maintenance Programs." Chapter to be published in *Air Pollution in Megacities* by the American Geophysical Union.

De la Rue du Can, Stephane and Tom Wenzel, 2008. *Improving the Carbon Dioxide Emission Estimates from the Combustion of Fossil Fuels in California*. October. LBNL-2332E.

Wenzel, Tom and Marc Ross, 2008. "The Relationship between Vehicle Weight/Size and Safety," in *The Physics of Sustainable Energy: Using Energy Efficiently and Producing It Renewably*. Hafemeister, David, Barbara Levi, Mark Levine, Peter Schwartz, editors. The American Institute of Physics: Melville, New York.

De la Rue du Can, Stephane and Tom Wenzel, 2008. *Spatial Disaggregation of CO2 Emissions for the State of California*. June. LBNL-759E.

Wenzel, Tom, 2007. *Evaluation of the 2003-2004 Phoenix I/M Program Using Random Sample Data*. Draft report to the Arizona Department of Environmental Quality. July. (prepared as an outside private consultant)

Eastern Research Group, 2007. *Relationship between OBDII Data and IM240 Emissions in the Colorado I/M Program*, Final report to the Colorado Department of Public Health. June 29. (prepared as an outside private consultant)

Gordon, Deborah, David L Greene, Marc H. Ross, Tom P. Wenzel, 2007. *Sipping Fuel and Saving Lives: Increasing Fuel Economy without Sacrificing Safety: A report informed by an October 3, 2006 Experts Workshop on Simultaneously Improving Vehicle Safety and Fuel Economy through Improvements in Vehicle Design and Materials*. June. LBNL-62785.

Wenzel, Tom and Marc Ross, 2006. *Increasing the Fuel Economy and Safety of New Light-Duty Vehicles*. White paper prepared for The William and Flora Hewlett Foundation Workshop on Simultaneously Improving Vehicle Safety and Fuel Economy Through Improvements in Vehicle Design and Materials. October. LBNL-60449.

Wenzel, Tom, 2005. *Use of California Remote Sensing Pilot Project Data for On-road Fleet and Emissions Characterization, and Evaluation of the Enhanced Smog Check Program*. Draft report to the California Bureau of Automotive Repair and Air Resources Board, under a subcontract with Eastern Research Group. September. (prepared as an outside private consultant)

Wenzel, Tom and Marc Ross, 2005. "Comments in response to *Average Fuel Economy Standards for Light Trucks*, NHTSA docket number NHTSA-2005-22223," Comments submitted to National Highway Traffic Safety Administration Docket NHTSA-2005-22223, November 18. LBNL- 60759.

Kishan, Sandeep, Tom Wenzel, Rick Baker, Scott Fincher, Marty Wolf, Andrew Burnette, Michael Sabisch, 2005. *Evaluation of the Ontario Drive Clean Program*. Final report for the Ontario Ministry of the Environment. Eastern Research Group, Inc.: Austin, TX. July. (prepared as an outside private consultant)

Wenzel, Tom, 2005. *Evaluation of the Arizona I/M Program Using Random Sample Data*. Final report for the Arizona Department of Environmental Quality. Eastern Research Group, Inc.: Austin, TX. May. (prepared as an outside private consultant)

Wenzel, Tom and Marc Ross, 2005. *Analysis of the Relationship between Risk to Drivers and Illegal Driving Behavior, Driver Characteristics, Rural Driving, and Seat Belt Use*. LBNL-56775.

Wenzel, Tom, and Marc Ross, 2004. "Comments in response to *Advanced notice of proposed rulemaking, Reforming the automobile fuel economy standards program, NHTSA docket NHTSA-2003-16128*," Comments submitted to National Highway Traffic Safety Administration Docket NHTSA-2003-16128, April 29. LBNL-55419

Wenzel, Tom, and Marc Ross, 2004. "Comments on *Vehicle weight, fatality risk and crash compatibility of model year 1991-99 passenger cars and light trucks, DOT HS 809-662*," Comments submitted to National Highway Traffic Safety Administration Docket NHTSA-2003-16318, March 24. LBNL-55418.

Eastern Research Group, Inc., 2004. *Revisions to Baseline Analysis of Compliance with I/M and Registration Requirements in Arizona*. Draft report for the Arizona Department of Environmental Quality. February.

Pollack, Alison, Till Stoeckenius, Cuong Tran, Tom Wenzel, Joel Schwartz, and Virginia McConnell, 2003. *Performance Audit of the Colorado AIR program*. Final report to the State of Colorado Office of the General Auditor. ENVIRON, International. June. (participation as an outside private consultant).

Eastern Research Group, Inc., 2002. *Baseline Analysis of Enhanced I/M Compliance*. Final report for the Arizona Department of Environmental Quality. June.

Eastern Research Group, Inc., 2002. *Analysis of Historical Remote Sensing and I/M Emissions Data in Arizona*. Final report for the Arizona Department of Environmental Quality. June.

Ross, Marc and Tom Wenzel, 2002. *An Analysis of Risk by Vehicle Type and Model*. American Council for an Energy Efficient Economy, report number T021. LBNL-49675.

Ross, Marc and Tom Wenzel, 2001. *Losing Weight to Save Lives: A Review of the Role of Automobile Weight and Size in Traffic Fatalities*. American Council for an Energy Efficient Economy, report number T013. LBNL-48009.

Ross, Marc and Tom Wenzel, 2001. *Losing Weight to Save Lives: A Brief Summary*. Submitted to the NRC committee to Review the Effectiveness and Impact of CAFE Standards. LBNL-48010. April.

Ross, Marc and Tom Wenzel, 2001. *Comments on the Alliance of Automobile Manufacturers' Review and Critique of Our Report "Losing Weight to Save Lives"*. Submitted to the NRC committee to Review the Effectiveness and Impact of CAFE Standards. LBNL-48058. April.

Wenzel, Tom, 2001. *Can More Frequent Testing Improve I/M Program Effectiveness? Analysis of the Effect of Annual Testing in the Phoenix IM240 Program*. Final report to Environmental Systems Products, Inc. Lawrence Berkeley National Laboratory, LBNL-47754. April.

Wenzel, Tom, 2000. *Evaluation of the Effectiveness of Alternative Fast Pass, Fast Fail, and Retest Algorithms in the Phoenix IM147 Program*. Final report to the Arizona Department of Environmental Quality. Lawrence Berkeley National Laboratory, LBNL-48006. October.

Wenzel, Tom and Robert Sawyer, 2000, *Analysis of State Data on In-Use Emissions from Motor Vehicles: Review of Work Completed*. Report to U.S. EPA. Lawrence Berkeley National Laboratory, LBNL-46816. September.

Wenzel, Tom, Brett Singer, Etan Gumerman, Robert Slott, and Robert Sawyer. 2000. *Section III: Evaluation of the Enhanced Smog Check Program: A Report to the California Inspection and Maintenance Review Committee*. Final report submitted to the California Inspection and Maintenance Review Committee. Lawrence Berkeley National Laboratory, LBNL-46117. June.

Wenzel, Tom, 1999. *Using Program Test Result Data to Evaluate the Phoenix I/M Program*. Report to the Arizona Department of Environmental Quality. December. (prepared as an outside private consultant).

Barth, Matthew, Feng An, Theodore Younglove, Carrie Levine, George Scora, Marc Ross, and Tom Wenzel. 1999. *NCHRP Project 25-11: The Development of a Comprehensive Modal Emissions Model*. Final report submitted to the National Cooperative Highway Research Program. LBNL-46116. November.

Wenzel, Tom and Kenneth Train, 1999. *The Impact of Congestion on Vehicle Miles Traveled: Investigation of a New Method within a Statewide Forecasting Model*. A report to the California Energy Commission and the University of California Office of the President. Lawrence Berkeley National Laboratory. July.

Wenzel, Tom and Robert Sawyer, 1999. *Emission Reduction Potential from Repairing Gross Emitters*. Memo to James Bagian, US EPA. February 4.

Wenzel, Tom and Robert Sawyer, 1998. *Review of Sierra Research Report "Development of a Proposed Procedure for Determining the Equivalency of Alternative Inspection and Maintenance Programs"*. Report to US EPA. Lawrence Berkeley National Laboratory, LBNL-44045. September.

Wenzel, Tom and Robert Sawyer. 1998. *Analysis of a Remote Sensing Clean Screen Program in Arizona*. Final report to U.S EPA. Lawrence Berkeley National Laboratory, LBNL-41918. June.

Wenzel, Tom, Jonathan G. Koomey, Gregory J. Rosenquist, Marla Sanchez, and James W. Hanford. 1997. *Energy Data Sourcebook for the U.S. Residential Sector*. Lawrence Berkeley National Laboratory, LBNL-40297. September.

Ross, Marc, Robert Goodwin, Rick Watkins, Michael Wang and Tom Wenzel, 1995. *Real-World Emissions from Model Year 1993, 2000, and 2010 Passenger Cars*. American Council for an Energy Efficient Economy and Lawrence Berkeley National Laboratory, LBL-37977. November.

Wenzel, Tom. 1995. *Analysis of National Pay-as-You-Drive Insurance and Other Variable Driving Charges*. Lawrence Berkeley National Laboratory, LBL-37321. July.

Atkinson, Barbara, James McMahon, Evan Mills, Peter Chan, Terry Chan, Joseph Eto, Judith Jennings, Jonathan Koomey, Kenny Lo, Matthew Lecar, Lynn Price, Francis Rubinstein, Osman Sezgen, and Tom Wenzel, 1992. *Analysis of Federal Policy Options for Improving U.S. Lighting Energy Efficiency: Commercial and Residential Buildings*. Lawrence Berkeley Laboratory, LBL-31469. December.

Non-refereed journals, books, proceedings

Thomas, Valerie M., Alan K. Meier, Thomas P. Wenzel, and Siva G. Gunda, 2008. Appliance Energy Use in America's Second Home – The Automobile.” Published in *Proceedings of the 2008 ACEEE Summer Study on Energy Efficiency in Buildings*.

Wenzel, Thomas P. and Marc Ross, 2008. “Safer Vehicles for People and the Planet: Response to a Letter to the Editor.” *American Scientist*, 96:3 (May-June), 179. LBNL-311E

Wenzel, Thomas P. and Marc Ross, 2008. “Safer Vehicles for People and the Planet.” *American Scientist*, 96:2 (March-April), 122-128. LBNL-325E

Ross, Marc, Deena Patel, and Tom Wenzel, 2006. “Vehicle design and the physics of traffic safety.” *Physics Today*, 59: 49-54. LBNL-62796

“Further Evidence of Flipper Vehicles in State I/M Data,” Tom Wenzel, Proceedings of the 16th Coordinating Research Council On-Road Vehicle Emissions Workshop, San Diego, CA, March 28-30, 2006.

“Emissions Deterioration in OBDII-equipped Vehicles,” Tom Wenzel, Proceedings of the 15th Coordinating Research Council On-Road Vehicle Emissions Workshop, San Diego, CA, April 4-6, 2005.

“Evidence of Flipper Vehicles in State I/M Data,” Tom Wenzel, Proceedings of the 14th Coordinating Research Council On-Road Vehicle Emissions Workshop, San Diego, CA, March 29-31, 2004.

“Are SUVs really safer than cars?” Tom Wenzel and Marc Ross, *Access*, 21 (2002) 2-7.

“Analysis of Historical Remote Sensing and I/M Data for the Arizona Alternative Compliance and Testing Study (AZ ACTS),” Tom Wenzel, Proceedings of the 12th Coordinating Research Council On-Road Vehicle Emissions Workshop, San Diego, CA, April 15-17, 2002.

“Simulation of Annual Testing in the Phoenix IM240 Program,” Tom Wenzel, Proceedings of the 11th Coordinating Research Council On-Road Vehicle Emissions Workshop, San Diego, CA, March 26-28, 2001.

“Evaluation of California Smog Check II,” Tom Wenzel and Brett Singer, Proceedings of the 10th Coordinating Research Council On-Road Vehicle Emissions Workshop, San Diego, CA, March 27-29, 2000.

“Comparison of the Incidence of High Emitters in IM240 and Remote Sensing Measurements,” Marc Ross and Tom Wenzel, Proceedings of the 10th Coordinating Research Council On-Road Vehicle Emissions Workshop, San Diego, CA, March 27-29, 2000.

“The (Unexpected) Success of the Emissions Regulation in Advancing Vehicle Technology,” to be published in the Proceedings of the Transportation Energy and Environmental Policy for the 21st Century conference, Pacific Grove, CA, August 24, 1999.

“In-Use Emissions by Vehicle Model,” published in the Proceedings of the Ninth Coordinating Research Council On-Road Vehicle Emissions Workshop, San Diego CA, April 20, 1999

“Evaluation of Arizona’s Enhanced I/M Program,” published in the Proceedings of the Ninth Coordinating Research Council On-Road Vehicle Emissions Workshop, San Diego, CA, April 21, 1999.

“Characterization of Recent-Model High-Emitting Automobiles,” Tom Wenzel and Marc Ross, Society of Automotive Engineers Technical Paper 981414, 1998.

“Further Analysis of I/M Failure Rates by Vehicle Model,” Tom Wenzel, published in the Proceedings of the Eighth CRC On-Road Vehicle Emissions Workshop, 1998.

“Forum: The Few. The Failed. The Polluters,” Marc Ross and Tom Wenzel, *Technology Review*, 100:6, August/September 1997.

“I/M Failure Rates by Vehicle Model,” Tom Wenzel and Marc Ross, published in the Proceedings of the Seventh CRC On-Road Vehicle Emissions Workshop, 1997.

“In-Use Emissions by Vehicle Model,” Tom Wenzel and Marc Ross, published in the Proceedings of the World Car Conference 97, 1997.

“Real World Emissions from Conventional Passenger Cars,” Marc Ross and Tom Wenzel, in *Transportation, Energy, and Environment: How Far Can Technology Take Us?*, edited by John DeCicco and Mark Delucchi, American Council for an Energy Efficient Economy, Washington: DC, 1997.

Emissions from Modern Passenger Cars with Malfunctioning Emissions Controls, Tom Wenzel and Marc Ross, Society of Automotive Engineers Technical Paper 960067, 1996.

“Relationship between Vehicle Attributes and Malfunction of Emissions Control Systems,” Tom Wenzel and Marc Ross, published in the Proceedings of the Sixth CRC On-Road Vehicle Emissions Workshop, 1996.

“Retrospective Analysis of National Energy Efficiency Standards for Refrigerators,” Lorna A. Greening, Alan Sanstad, James E. McMahon, Tom Wenzel, and Steven J. Pickle, published in the Proceedings of the 1996 ACEEE Summer Study