

**Texas Environmental Research Consortium  
Environmental Technology Advisory Council  
as of March 2, 2006**

**1. Dr. Jerald A. Caton**  
**Texas A&M University**



Dr. Caton is currently a Professor of Mechanical Engineering at Texas A&M University. Professor Caton completes research and engineering projects in the areas of engines, emissions and energy. His work on engines includes the development and use of thermodynamic engine cycle simulations, and technical assessments of engine technology concepts. With respect to emissions, Professor Caton has been completing research in the area of selective non-catalytic removal (SNCR) of nitric oxides since 1987. He was one of the pioneers in the development of the SNCR process using cyanuric acid. He has developed a dedicated laboratory for this work which includes the capabilities to simulate exhaust gases from various combustion devices, an electric furnace to achieve gas temperatures up to 1300 K, and an FTIR spectrometer for quantitative measurements of most of the nitrogen species (including NO, NO<sub>2</sub> and N<sub>2</sub>O) and products of combustion. He has extended the original studies to include the use of ammonia and urea. He has studied the decomposition of urea for these applications. As an extension of his SNCR research, Professor Caton has completed a series of projects to evaluate the use of new catalysts for use in SCR applications. The SCR processes have been studied for a range of oxygen concentrations, gas temperatures, and ammonia-to-nitric oxide ratios.

**2. Dr. Dan Cohn**  
**Massachusetts Institute of Technology**



In 1971, Dr. Cohn began a career at MIT as a research staff member at the Francis Bitter National Magnet Laboratory. He has been involved in a variety of research activities involving use of plasmas for environmental and energy applications. He is currently Head of the Plasma Technology Division of the Plasma Science and Fusion Center. Dr. Cohn also holds an appointment as a Senior Research Scientist with the MIT Nuclear Engineering Department. He was a consultant in laser related defense technologies for MIT Lincoln Laboratory from 1986 to 1991. Dr. Cohn was a co-founder of Integrated Environmental Technologies, Inc. (IET). IET is an early stage commercial stage company that provides plasma furnace systems for environmentally protective conversion of hazardous, medical, municipal and other waste into hydrogen and other valuable products. Dr. Cohn is a holder of 25 U.S. patents. He has authored or co-authored more than 150 publications in journals, conference proceedings and book chapters. He is a fellow of the American Physical Society and a member of the American Nuclear Society where he served as Chairman of the Fusion Division. Dr. Cohn was Editor of the Journal of Fusion Energy from 1984 to 1992. He is a member of Phi Beta Kappa. Dr. Cohn was a recipient of R&D 100 Awards for environmental technologies in 1994, 1995 and 1998. He was the winner of the Discover Award for Technological Innovation in Transportation in 1999. The award was given for his work on plasma boosted onboard hydrogen generation for environmentally improved internal combustion engines.

**3. Dr. Don Hillebrand**  
**Transportation Technology R&D Center**  
**Argonne National Laboratory**

Dr. Hillebrand leads the Vehicle Systems Section of Argonne National Lab's Center for Transportation Research. He leads the three groups that are responsible for advanced vehicle testing and evaluation, modeling and systems analysis, and hardware in the loop development of hydrogen technologies. Dr. Hillebrand has over 20 years experience in automotive engineering, research management, and government affairs. He has also served as Senior Policy Advisor to the Executive Office of the President, White House Office of Science and Technology Policy and as an advisor to the European Commission Research Directorate in Brussels.

**4. Dennis Johnson**  
**United States Environmental Protection Agency**

Dennis Johnson earned a Bachelor of Science in Mechanical Engineering from Old Dominion University in 1988. As an Environmental Engineer at the Environmental Protection Agency for over 15 years, Dennis has worked to control air pollution from mobile sources in the areas of compliance, enforcement, regulation development and certification for both on-highway and nonroad engines. Dennis has also worked extensively with EPA's ROVER system performing on-road emission testing and has evaluated other portable emission testing systems.

**5. Dr. Joe Kubsh**  
**Manufacturers of Emission Control Association**

Dr. Kubsh has been involved with the development and application of mobile source, emission control technologies for more than 20 years. In that time he has been actively involved in catalyst and substrate development programs for both mobile source and stationary source applications, including advanced catalyst coatings, thermally stabilized support materials, and the development of metallic and ceramic substrates for these applications. Dr. Kubsh joined the Manufacturers of Emission Controls Association (MECA) in 2002 and was appointed Executive Director in November 2005. MECA is a non-profit industry association that provides technical information on mobile source emission controls to air quality officials and other stakeholder groups. Dr. Kubsh has authored more than 20 SAE papers or other technical articles in the mobile source application area, served often as an SAE session/SAE TOPTEC/symposium organizer, and is a past Vice Chairman of SAE's Fuels & Lubricants emissions activities. He received a B.S. in Chemical Engineering from Purdue University in 1977 and a Ph.D. in Chemical Engineering from the University of Wisconsin – Madison in 1982. After receiving his doctorate degree, Dr. Kubsh joined W.R. Grace's Corporate Research & Development laboratories in Columbia, Maryland, serving in a variety of automotive catalyst technology development positions over the next 14 1/2 years. Dr. Kubsh joined Engelhard's Environmental Technologies Group (Iselin, New Jersey) in early 1997 and worked in both Engelhard's Research & Development group and Engelhard's Marketing group on mobile source catalyst systems.

**6. Dr. Thomas Lanni**  
**New York State Dept. of Environmental Conservation**

Thomas Lanni has been active in various fields of environmental research for the past 15 years. He earned his Ph.D. degree in Physics at the University at Albany for the design of a UV differential optical absorption spectrometer used to measure air quality in remote and urban areas. He then worked as a Research Associate in the atmospheric chemistry group at the Atmospheric Sciences Research Center. During his tenure there he contributed to field and laboratory studies related to acid rain, ozone and photochemical smog formation. The techniques and instrumentation he developed have been acknowledged nationally and internationally, and have become accepted as standards in the air quality monitoring and control community. Dr. Lanni is now Senior Research Scientist at the New York State Department of Environmental Conservation, Division of Air Resources, Bureau of Mobile Sources and Technology Development. He is involved in the systematic study of emissions from on-road and non-road engines, including the evaluation of the impact of various fuels and emission control strategies. A recent focus of this work has been the development of sampling and in-use measurement protocols for ultra-fine particulate matter and toxic air contaminants. Dr. Lanni's research has been undertaken to help industry, the government, and the public make informed decisions about the control of motor vehicle emissions and associated effects on air quality and human health.

**7. Barry Liebowitz**  
**New York State Energy Research and Development Authority**

Barry Liebowitz is currently a Senior Project Manager at the New York State Energy Research and Development Authority (NYSERDA) – Air Pollution Control & Monitoring Technology Department. Barry began working at NYSERDA after receiving his M.S. degree in mechanical engineering from the University of Massachusetts in 1981. He has been responsible for the successful development and management of more than \$15 million of public benefit environmental research programs. His current responsibilities include managing projects in air quality, environmental technology and water/wastewater technology. Recent projects related to air quality monitoring, emissions testing and technology development include: the Joint Enhanced Ozone and Particulate Matter Technology Assessment and Characterization Study - NY (the "PM Supersite project") supported by the U.S. EPA with the Atmospheric Science Research Center SUNY at Albany; the Development of Fine Particulate Emission Factors and Speciation Profiles for Oil- and Gas-Fired Combustion Systems, with GE-Environmental & Energy Research, supported by the U.S. DOE, Gas Technology Institute, California Energy Commission and the American Petroleum Institute; and the development the Filter Dynamic Measurement System (FDMS), a near real time measurement system for ambient fine particulate matter with Rupprecht & Pataschnick Company, now ThermElectron R&P.

## **8. Dr. Ron Matthews** **University of Texas**



Dr. Matthews obtained his Bachelor's degree in Mechanical Engineering from the University of Texas followed by three graduate degrees from the University of California at Berkeley, culminating in 1977 with a PhD with a specialization in combustion. He joined the faculty of the Department of Mechanical Engineering at the University of Texas in 1980 where he established their combustion and engines research program. He is the Head of the General Motors Foundation Combustion Sciences and Automotive Research Laboratories on the UT campus. He is also the Faculty Advisor for UT's student branch of the Society of Automotive Engineers, and has been since he founded UT's student branch in 1980. He has been involved in research in the area of combustion, engines, emissions, and alternative fuels for over 25 years. His research includes both experimental work and numerical modeling of both fundamental combustion processes and combustion within engines. His present research is focused primarily on reducing emissions from spark ignition engines, alternative diesel fuels, the spark ignition process, and engine friction. In 1992, he received the Arch T. Colwell Merit Award from the Society of Automotive Engineers for his work on the first use of fractal geometry to model the combustion process within a spark ignition engine. This award is given to recognize outstanding contributions to knowledge. In 1996 and again in 1998, UT's body of work on fractal engine modeling was nominated for the ComputerWorld Award and selected for inclusion in the Smithsonian's National Museum of American History Permanent Research Collection on Information, Technology, and Society. In 2002, he received four awards from the Society of Automotive Engineers: 1) he was elected to be an SAE Fellow, 2) he received the SAE's Excellence in Engineering Education (Triple E) Award, 3) along with two of his former PhD students (Dr. Yiqun Huang, now with Southwest Research Institute, and Dr. Terry Alger, now with Ford) and Prof. Janet Ellzey, Prof. Matthews received the Myers Award from SAE recognizing the most outstanding student-authored SAE technical paper, and 4) he was a recipient of the SAE Faculty Advisor Award. He has been a consultant to the National Academy of Sciences, Lockheed Missiles and Space Company, the National Institute of Standards and Technology, General Motors Corporation, Argonne National Laboratory, and many other government agencies and private companies, primarily in the engines area.

## **9. Bill Van Amburg** **WestStart-CALSTART**

Bill Van Amburg is Senior Vice President of WestStart-CALSTART, a non-profit organization that works with the public and private sectors to develop advanced transportation technologies and foster companies that will help clean the air, lessen our dependence on foreign oil, reduce global warming, and create jobs. He leads major programs and business development efforts for the consortium, as well as sharing in overall organization management. A primary responsibility is serving as program manager of the Hybrid Truck Users Forum (H-TUF) – a national program to commercialize heavy-duty hybrid trucks operated in partnership with the U.S. Army's National Automotive Center (NAC). Van Amburg has more than 25 years of experience in marketing and market development, technology commercialization, communications and environmental markets, including emission credit trading. He is a graduate of the Executive Management Program at the UCLA Anderson School of Management and has a certificate in Brand Management from the Stanford Alumni Association, as well as a bachelor's degree in Anthropology from the University of California, Berkeley.

## **10. Richard (Dick) Wilson**

### **National Environmental Strategies**

Dick Wilson is currently Senior Vice President of National Environmental Strategies, Inc. Prior to joining NES, Dick was Deputy Assistant Administrator, Office of Air and Radiation (OAR) where he directed the day-to-day operations. Dick also served as the Acting Assistant Administrator for OAR, responsible for EPA's airborne pollutant, global climate and radiation programs. Dick's extensive government service includes a series of increasingly responsible positions with the Environmental Protection Agency since its formation in 1970. His positions have included: Director, Office of Mobile Sources; Deputy Assistant Administrator for General Enforcement; Director of the Office of Air, Noise, and Radiation Enforcement; and Director, Stationary Source Enforcement Division. For his services to the Government, Mr. Wilson received awards by the President of the United States in 1993, 1989, and 1980 and numerous awards from EPA. Dick has a Bachelor of Science Degree in Electrical Engineering from Lafayette College, Eaton, Pennsylvania, and a Masters Degree in Business Administration from the Wharton School of the University of Pennsylvania, Philadelphia, Pennsylvania. He is a member of EPA's Clean Air Act Advisory Committee.

## **11. Michael P. Walsh**

### **International Consultant**

Michael P. Walsh is a mechanical engineer who has spent his entire career working on motor vehicle pollution control issues at the local, national and international level. For the first half of his career, he was in government service, initially with the City of New York and subsequently with the US Environmental Protection Agency. With each, he served as Director of their motor vehicle pollution control efforts. Since leaving government, he has been an independent consultant advising governments and industries around the world. For several years he served as the Chairman of the World Bank Advisory Panel to the Mexico City Transport/Air Quality Management Program. He then served in a similar capacity with the Chinese National Environmental Protection Agency. During the 1980's he was an advisor to the US Senate Environment and Public Works Committee during development of the 1990 Clean Air Act Amendments. In addition he currently co-chairs the US EPA's Mobile Source Advisory Subcommittee and is actively involved in projects in Brazil, Hong Kong, Mexico, The Philippines, Viet Nam, and China. He was the principle technical consultant to the Asian Development Bank regarding a regional technical assistance project, "Reducing Motor Vehicle Emissions in Asia" and served as a peer review expert to the EU Commission during its deliberations regarding near zero sulfur fuels. Currently he serves on the Executive Council of the Clean Air Initiative (CAI) – Asia and is a member of the Steering Committee of the CAI-Asia China Project. He was selected as the first recipient of the U.S. Environmental Protection Agency Lifetime Individual Achievement Award for "outstanding achievement, demonstrated leadership, and a lasting commitment to promoting clean air". More recently, he received the California Air Resources Board's "Haagen Smit" award for his "global efforts towards mobile source emissions reduction".