Participant Bio Sketches

Harold W. Adams, Jr. is a Project director for Dominion Resources' generation Business Development group, serving in a part time advisory capacity. In this role, he provides technical, management and regulatory support for early development of new electric generating stations, including Dominion's proposed 1500 MW North Anna 3 nuclear plant in Virginia and various Dominion wind power projects in Virginia and other states. Mr. Adams also provides limited technical consulting services related to T&D electrical reliability for clients outside of Dominion's Virginia and North Carolina service areas.

Mr. Adams' experience with Dominion Resources includes transmission operations, system planning, local distribution field operations, and 115 kV to 500 kV transmission line design. He has held department management responsibility for T&D engineering, substation engineering, structural engineering, transmission line maintenance, and transmission and substation project construction. For five years he managed Dominion's System Operations Center. In this capacity he was responsible for reliable operation of the company's control area and the transmission system serving most of Virginia and a portion of North Carolina. Mr. Adams has also managed Dominion Resources' representation in Regional Transmission Organizations (PJM, ISO-NE, MISO) and served as Dominion's senior representative to the North American Electric Reliability Corporation (NERC). Mr. Adams is a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE), a member of the IEEE Power and Energy Society, and a member of the IEEE-USA Energy Policy Committee. He is a Distinguished Member of the international power systems engineering organization Conseil International des Grands Reseaux Electriques (CIGRE).

Mr. Adams received his Bachelor of Science in Electrical Engineering from Virginia Tech in 1973 and his Master of Business Administration from the University of Richmond in 1982. He attended the Duke University Advanced Management Program in 1989. He is a Registered Professional Engineer in Virginia.

Marcus Bowman

- Research Director, Japan International Transport Institute
- Founder and President, 3G Mobility
- Vice Chair, Young Professionals in Transportation

Professionally, I have worked for Japan-affiliated organizations for the past 6 years. As a Research Director at International Access Corporation (IAC), I have managed research contracts regarding a broad-range of transportation and environmental issues, including clean-coal technology; climate change solutions; roadway safety; highway financing, including PPP; and Intelligent Transportation Systems (ITS). The work for IAC has included several consulting trips to Tokyo including presentations at Japan's Ministry of Land, Infrastructure, Transportation, and Tourism. Today, I organize Japan-U.S. cooperative seminars and study groups via a contract with the Japan International Transport Institute (JITI). I work full-time at their office on L Street in Washington, DC.

I graduated from the esteemed engineering school of Iowa State University. Only, I didn't major in engineering—at least after my second semester. I finished with a Bachelor of Science in Finance and a minor in Economics. Since that time I added a Masters of Public Policy (MPP), with a transportation focus, from George Mason University. At George Mason I founded the School of Public Policy Student Association (SPPSA). Recently, I co-founded the Young Professionals in Transportation (YPT) a national and international organization, based in Washington, DC, with now has over 1,600 members in just one year.

In addition to this work, I have a strategy and research consulting business which began as IAC Transportation. I am the founding executive of IAC Transportation and was a sponsoring partner of the AASHTO Transportation Vision Summit in 2007. Today, this is 3G Mobility (http://www.3gmobility.ws). Innovative publications at 3G Mobility include unique perspectives and alternative viewpoints regarding the transportation challenges of this century. Most notably, a 3G Mobility computer model forecasts long-term travel trends and calculates emission levels accounting for various policy and technology developments out to 2050. The research and consulting provided through 3G Mobility utilizes my education in economics, as well as my broad, professional experience working in the transportation, finance, and environmental industries for over 10 years.

John Carberry retired in late 2007 as Director of Environmental Technology for the DuPont Company. At DuPont, he was responsible for analysis and recommendations for technical programs and product development for DuPont based on environmental issues. Since 1989, he led that technology function to provide excellence in treatment and remediation while in a transition to leadership in waste prevention, product stewardship and sustainability. Mr. Carberry presently consults (Carberry EnviroTech) on product and process strategies for dealing with the environmental issues of energy, renewable energy, sustainability, and nanomaterials and Chairs the AIChE Project on

Metrics for Liquid Bio-fuels. He is also an adjunct professor at both Cornell University and the University of Delaware, teaching chemical reactor engineering and an introductory engineering course. John serves on the National Academy Committee on Closure Plans for Tooele Chemical Agent Disposal Facility and on the Academy's Roundtable on Science and Technology for Sustainability where he Chairs its sub-committee on sustainable bio-fuels. Mr. Carberry is a founding member of the Green Power Market Development Group. He recently was Chair of the National Academy Committee on the Destruction of the Non-Stockpile Chemical Weapons, and served on eight previous National Academy Committees. He holds a B.ChE. and an M.E. in Chemical Engineering from Cornell University, an MBA from the University of Delaware, is a Fellow of the AIChE and is a Registered Professional Engineer (Chemical).

Mr. Carberry lives in Vero Beach, Florida and Newark, Delaware with his wife Sandra. They have two married children and five grandchildren.

Leon Clarke. Dr. Clarke is a Senior Research Economist at the Pacific Northwest National Laboratory (PNNL), and he is a staff member of the Joint Global Change Research Institute (JGCRI), a collaboration between PNNL and the University of Maryland at College Park. Dr. Clarke's current research focuses on the role of technology in addressing climate change, international climate policy, scenario analysis, and integrated assessment model development. Dr. Clarke coordinated the U.S. Climate Change Science Program's emissions scenario development process, and he was a contributing author on the Working Group III contribution to the IPCC's Fourth Assessment Report. He is currently co-coordinator of the Energy Modeling Forum 22 Transition Scenarios project, a lead author on the IPCC's Special Report on Renewable Energy, and a member of the National Academy Study on America's Climate Choices. Prior to joining PNNL, Dr. Clarke worked for Lawrence Livermore National Laboratory, Pacific Gas & Electric Company, and RCG/Hagler, Bailly, Inc. He was also a research assistant at Stanford's Energy Modeling Forum. Dr. Clarke received B.S. and M.S. degrees in Mechanical Engineering from U.C. Berkeley and M.S. and Ph.D. degrees in Engineering Economic Systems and Operations Research at Stanford University.

Steve Crookshank is a Senior Economist with the American Petroleum Institute. For over 15 years, Steve has analyzed and managed issues impacting almost every aspect of the petroleum industry, with particular focus on marine transportation issues, exploration and production issues and climate change issues. Currently, Steve manages API's CCS Workgroup and supports the activities of the Climate Change Steering Committee. Steve holds a Master's of Science in Economics from the University of Delaware.

Mary Ann Curran directs the Life Cycle Assessment (LCA) research program at the US EPA's National Risk Management Research Laboratory in Cincinnati, Ohio. Her activities include the development of LCA methodology, the performance and review of life-cycle case studies, planning life-cycle workshops and conferences, and the development of a life cycle data and resources website (www.epa.gov/ORD/NRMRL/lcaccess). As a recognized, international LCA expert, Mary Ann works closely with the Society of Environmental Toxicology and Chemistry (SETAC), which has been instrumental in advancing LCA awareness worldwide, and actively participates in the UNEP/SETAC Life Cycle Initiative. Mary Ann serves as the Subject Editor (Cleaner Production Tools) for the *Journal of Cleaner Production* and on the editorial boards of the *International Journal of Life Cycle Assessment*, and *Management of Environmental Quality*, and the advisory boards of the on-line journals *Sustainability* and the *International Journal of Environmental Research and Public Health.* Mary Ann has authored and co-authored numerous papers and book chapters which address the LCA concept and its applications. She has presented EPA's activities in LCA-related research at technical meetings across the U.S. and in Europe, South America, South Africa, and Australia. Mary Ann has been with the EPA's Office of Research and Development since 1980. She studied Chemical Engineering at the University of Cincinnati (BSChE 1980); Environmental Management and Policy at Lund University, Lund, Sweden (MSc 1996); and earned a Doctor of Philosophy degree at Erasmus University's International PhD program on "Cleaner Products, Cleaner Production, Industrial Ecology and Sustainability" for her thesis entitled "Development of Life Cycle Methodology: A Focus on Co-Product Allocation" (2008). Mary Ann is a Fellow of the American Institute of Chemical Engineers (AIChE).

Arnold Feldman. Mr. Feldman earned a Bachelor of Science in Chemical Engineering at New Mexico State University in 1969. Before beginning environmental work, he held a variety of engineering and production positions at industrial facilities in both the U.S. In 1980 Mr. Feldman became the Environmental Manager at a large chemical plant in Illinois for Olin Corporation. He was responsible for overall compliance of the plant along with energy use/conservation. Since then he has held numerous positions in the environmental field with a heavy concentration on waste and remedial programs. He was responsible for compliance monitoring and assistance for a wide range of industrial facilities for Olin and FMC Corporation's throughout the world; in 1998, Mr. Feldman became the FMC Corporate Manager for Solid Waste. In 1999, Mr. Feldman set up his own environmental consulting firm, JJDS

Environmental, dedicated to complying with environmental laws and regulations on a cost effective basis. Mr. Feldman has developed various environmental training tools and compliance assistance programs for both Olin and FMC Corporation's. He has been involved in numerous remedial programs (Federal, State, Local, and voluntary) throughout the U.S.
Mr. Feldman is a Senior Member of AIChE and a Member of ASME. He is currently Chair of the ASME Hazardous Waste Incinerator Operators Certification Committee and Vice Chair of the Testing Sub-Committee. He also serves as an ASME representative on the United Engineers Association Founders Society Carbon Management Task Force and is Co-chair of the Transportation Committee. Mr. Feldman is also a member of the ASME Carbon Sequestration Committee. He was the Chair of the ASME Task Force on MultiPollutant Legislation Analysis. Mr. Feldman was a member of the National Governors Association/EPA Task Force on the RCRA Biennial Report. Mr. Feldman is a USACE/NAVFAC Certified Quality Manager.

Michael Gillenwater is a co-founder, Executive Director, and Dean of the Greenhouse Gas Management Institute, a non-profit organization focused on training and professionalizing the global community of experts that measure, account for, audit and manage greenhouse gas emissions. Michael is actively engaged in the training experts for the Kyoto Protocol and the UN Climate Change secretariat and supports the Clean Development Mechanism and Joint Implementation programs. He has been a lead author for the Nobel Peace Prize winning Intergovernmental Panel on Climate Change since 1999, and is a core advisor on the WRI/WBCSD GHG Protocol. At the U.S. Environmental Protection Agency, he co-established the U.S. Greenhouse Gas Emissions Inventory Program, and served on the U.S. delegation to the UN climate change negotiations. Michael is currently completing a PhD in the Science, Technology and Environmental Policy Program at Princeton University, where his research focuses on the design of tradable environmental commodities, emission offsets, and compliance monitoring and verification. He has a masters degrees in environmental engineering and public policy from MIT, was a Fulbright scholar to the United Kingdom, and a mechanical engineering bachelors from Texas A&M.

Dr. David Gray has a B.Sc. in Chemistry and Physics and a Ph.D. in physical chemistry from the University of Southampton in the U.K. and is currently Director of the Energy Systems Analysis Group (ESAG) at Noblis. He has over 30 years experience in all aspects of energy conversion technologies including the optimization of fossil energy resources, most particularly coal, for power generation, fuels, hydrogen, and chemicals. He started his energy career in a post doctoral position at Penn State University working in the Fuels Combustion and Coal Liquefaction area. In South Africa he worked on the production of liquid transportation fuels from coal. Dr. Gray has been working as a support contractor for the U.S. Department of Energy for the past 25 years. During this time, he has specialized in the analysis of advanced coal power systems including the impact on the technical performance, economics and environmental footprint of advanced gasification, advanced turbines, membrane oxygen systems, synthesis gas cleaning, and fuel cells on integrated gasification combined cycle systems. In addition to his work on advanced power systems, he has an intimate knowledge of systems for the production of hydrogen, chemicals, SNG, and Fischer-Tropsch fuels from coal, biomass, and natural gas feedstocks and has been involved in the detailed systems analyses of these complex conversion systems. His most recent work has included analysis of various Fischer-Tropsch CTL, BTL, and CBTL configurations to estimate performance and costs and to determine the overall life cycle GHG emissions of these plants compared to conventional petroleum.

Dennis Griffith has a BSChE from The University of Texas at Austin and an MSChE from University of Michigan, and he is a licensed professional engineer in Texas and Colorado. Dennis is currently a Project Manager with Granherne, a subsidiary of Kellogg Brown & Root, in Houston, and he leads in high level technical and economic feasibility studies.

Dennis is a member of the AIChE Energy Advisory Board and the Government Relations Committee. He has been active in air quality issues in the Greater Houston Area and has served as the vice chair of the Regional Air Quality Planning Committee of the Houston-Galveston Area Council. Dennis has also served in leadership positions of many professional, civic, and social organizations including vice president of the Engineers' Council of Houston and city council member in Spring Valley Village.

Recently, Dennis has been managing confidential studies on retrofitting CO_2 capture systems at existing gas plants. These studies include capture equipment selections, conceptual design, technical feasibility, and cost estimates of the proposed CO_2 capture systems.

Daniel K. Hardy, P.E., PTP is the Transportation Planning Chief for the Montgomery County Planning Department. The Planning Department's transportation planners provide recommendations for long-range master plans, transit and roadway project proposals, development review cases, and the County's growth policies.

Dan has twenty years of transportation planning and engineering experience in both the private and public sector and is a registered Professional Engineer in Maryland and Virginia and a Professional Transportation Planner. He is a member of the Transportation Research Board and the Institute of Transportation Engineers (ITE). Dan currently serves as the Chair of ITE's Transportation Planning Council and the ITE Climate Change and Energy Task Force.

Dale Keairns is a Technical Fellow at SAIC. He received his PhD in chemical engineering from Carnegie Mellon University and his B.S. in chemical engineering from Oklahoma State University. Dale served as the 2008 AIChE President and chairs the AIChE Center for Energy Initiatives. He led research, development and the commercialization of energy and environmental technologies at the Westinghouse Science & Technology Center from 1967 to 1999. Responsibilities included research and development of fossil, nuclear and renewable energy technologies; development of technologies for environmental remediation; and managing a commercial energy business. Project development and implementation included international customers and partners. Dale served as President of Particulate Solids Research Inc, an international industrial research consortium. At SAIC he has served as a consultant to the Department of Energy National Energy Technology Laboratory since 1999 supporting energy systems analysis and planning activities that guide technology research, development and demonstration programs. Dale serves on the American Association of Engineering Societies Board, the Managing Board of the AIChE Institute for Sustainability, and the Managing Board of the AIChE Center for Chemical Process Safety. He has served on the University of Pittsburgh Chemical Engineering Department faculty and on the Program for Technical Managers faculty at Carnegie Mellon University.

Robert G. Kennedy III, **PE** (Calif., Tenn.), is a senior systems engineer at Tetra Tech (2007-present), where he does green energy policy and business development at the local, state, and regional and (now) national levels. Educated in the classics and foreign languages since boyhood (Latin, Greek, Arabic, and Russian), he studied mechanical engineering at the California State Polytechnic University (Pomona, B.S. 1986), with an emphasis in robotics, machine design, optical physics, as well as Soviet studies and a summer in U.S. Army training. While an undergrad, he was recruited into a national security studies graduate program (San Bernardino, Special M.A., 1988). He designed industrial robotics systems and prepared facilities capital budget forecasts at the Douglas Aircraft Company (1987-1991) in Los Angeles, and pursued research in artificial intelligence at Oak Ridge National Laboratory (1987). After the Cold War ended, he founded the Ultimax Group, Inc. (1992-present), a Russian-American company in Oak Ridge, Tennessee. Ultimax specializes in nothing, but over the years has engaged in: nuclear science and systems engineering, military robotics, international trade, Russian space software publishing, countercracking and network security, and scenario-based studies on various strategic topics, e.g. space affairs, energy, arms control, missile defense, infrastructure security, and pandemics. He was chosen by ASME as their 1994 Congressional Fellow, spending his year working for the Subcommittee on Space in the U.S. House of Representatives, during which he: developed legislation; wrote White Papers; prepared expert witnesses; and advised Members on Russian affairs, Space Station, Milstar, and civil/military convergence. He was instrumental in the evolution of Presidential Decision Directive 23: Commercial Remote Sensing Policy; participated in the First Interstellar Robotics Conference at NYU, and was a technical consultant on "Deep Impact" (Paramount/Dreamworks major motion picture released May 8, 1998). He is a published commercial artist, editorial cartoonist, and author (nonfiction), and has written about space-based solar power, shell worlds, climate change, linguistics, energy parks, biofuels, and energy security, most recently in Journal of the British Interplanetary Society and forthcoming work on Soviet Star Wars in the Smithsonian Air & Space magazine. He has patents and trademarks pending for a number of optoelectronic, robotic, security, and space system inventions as well as the concept of Tetrageneration(TM). He serves in Oak Ridge city government as vice-chair of the Environmental Quality Advisory Board, which has been tasked by City Council to formulate the City's green policy, and initiated the policy decisions to authorize 5 million watts of photovoltaics in the City and institute single-stream-recycling-with-rewards, the first city in the Southeast to do so. He is a former adjunct member of ASME's Government Relations Committee; past-chair of the Oak Ridge Section as well as the Technology & Society Division; and currently sits on the Society's national Energy Committee, tasked with writing the White Paper on Transportation for ultimate delivery to the 111th Congress.

Haroon S. Kheshgi is the Global Climate Change Program Leader at ExxonMobil's Corporate Strategic Research. He studied chemical engineering at the University of Illinois (Urbana, B.S. 1978) and the University of Minnesota (Minneapolis, Ph.D. 1984). He pursued research at Lawrence Livermore National Laboratory (1983-1986) before joining Exxon Research and Engineering Company in 1986. At ExxonMobil Corporate Strategic Research his research addresses many aspects of global climate change including carbon cycle, detection and attribution of climate change, paleoclimate implications, and the mitigation of greenhouse gas emissions. He has contributed to the Intergovernmental Panel on Climate Change (IPCC) as lead author, contributing author, and review editor in the IPCC's last three assessment reports, its Special Report on Carbon Dioxide Capture and Storage, and its Special Report on Land Use Change. Recent activities include participation in the International Petroleum Industry Environmental Conservation Association's Climate Change Working Group as its chair, the Engineering Founder Societies' project on carbon management, the Society of Petroleum Engineering's committee on carbon capture and storage, and the

American Institute of Chemical Engineers Energy Advisory Board. He is currently Associate Editor of the journal Adaptation and Mitigation Strategies for Global Change, and a member of the US Carbon Cycles Science Steering Group and the NRC Climate Research Committee.

Lee Lane is a Resident Fellow at AEI. His research centers on the political economy of climate change, energy, regulation, and technology policy. He is co-director of AEI's geoengineering project. ("Geoengineering" refers to a set of technologies that, until more efficient emission control technologies become available, may well be able to counter global warming, possibly at very low cost.) Between 2000 and 2006 he was the executive director of the Climate Policy Center, which did policy analysis and promoted economically efficient responses to climate change. He is the author of *Strategic Options for Bush Administration Climate Policy* (AEI Press, November 2006). Mr. Lane has contributed chapters to several books on climate change and energy policy. He was the lead author of the 2006 NASA Ames workshop report on geoengineering. He has testified before Congress and worked extensively with executive branch agencies including NASA, the Department of Energy, and the State Department. He has consulted for CRA International an international economics and management consulting firm. Lane has consulted for both the American and Japanese governments on climate change, technology, and energy policy and with private sector clients both here and in Australia. Earlier, Mr. Lane planned and led several large scale advocacy projects for the US freight railroad industry.

Bruce D. McDowell is President of Intergovernmental Management Associates, a private consulting practice that serves federal agencies, non-profits, and other clients. As a professional urban planner, government executive, and management consultant for over 50 years, Dr. McDowell has wide experience with comprehensive planning, transportation, public works, and federal-aid programs. His experience spans local, regional, national, and international venues, and his specialty is intergovernmental relations and institutions. Following a local planning career (Maryland-National Capital Park and Planning Commission, 1959-1963) and a regional planning career (Metropolitan Washington Council of Governments, 1964-1972), Dr. McDowell worked 24 years for the U.S. Advisory Commission on Intergovernmental Relations (ACIR, 1972-1986 and 1988-1996 in addition to an initial assignment with ACIR in 1963-1964). He was also Director of Governmental Studies for the life of the congressionally established National Council on Public Works Improvement (1986-1988). For the past 13 years, Dr. McDowell was a senior project director at the National Academy of Public Administration, where he directed studies for such federal agencies as EPA, NOAA, the U.S. Army Corps of Engineers, FEMA, Interior, the U.S. Forest Service, DOT, and HUD. In late 2008, Dr. McDowell served on one of the task forces preparing Transition options for HUD in the Obama Administration. His current consulting work includes studies of multi-state freight institutions (for the Federal Highway Administration and the I-95 Corridor Coalition) and public information tools to help explain the new technologies being used to reduce transportation congestion, improve safety, and shrink the environmental footprint of transportation systems (for the Intelligent Transportation Society of America). Dr. McDowell is a Fellow of the American Institute of Certified Planners, a Fellow of the National Academy of Public Administration, and an Emeritus Member of the Transportation Research Board.

C. Andrew Miller is Chief of the Atmospheric Protection Branch with EPA's National Risk Management Research Laboratory (NRMRL), in the Office of Research and Development (ORD). He received his B.S. and M.S. in mechanical engineering from the University of Arizona, and his Ph.D. in mechanical engineering from North Carolina State University, and is a registered Professional Engineer in North Carolina. Dr. Miller has conducted research at EPA to characterize particulate matter from combustion sources, develop NOx controls using combustion modification, characterize emissions from emulsified fuels, and apply artificial intelligence to control emissions from hazardous waste incineration. He has been the research program leader for NRMRL's PM characterization and control program and was Acting National Program Director for the multi-Lab ORD PM research program, and is currently the technical lead for the NRMRL Biofuel/Bioenergy research team that is evaluating technologies and system-wide environmental impacts associated with biofuel and bioenergy production and use. He is Chair of the ASME Carbon Sequestration Committee and a member of the United Engineering Foundation Founder Society Carbon Measurement Team.

Warren B. Powell. A faculty member at Princeton University since 1981, Professor Powell specializes in stochastic optimization problems arising in a variety of resource allocation problems, with applications encompassing energy resource modeling, transportation, military operations, health and finance. He is the director of CASTLE Laboratory, which has developed planning systems for a wide range of operational problems. He has authored or coauthored over 140 refereed publications, and he is the author of *Approximate Dynamic Programming: Solving the curses of dimensionality*, published by John Wiley and Sons. This research has led to the first stochastic, multiscale model for energy policy analysis. A recipient of the Informs Fellows Award, Professor Powell has served in a variety of editorial and administrative positions for Informs, including Informs Board of Directors, Area Editor for Operations Research, President of the Transportation Science Section, and numerous prize and administrative committees.

Frank Princiotta is Director of the Air Pollution Prevention and Control Division (APPCD) of the National Risk Management Research Laboratory. He has a degree in Chemical Engineering and a Nuclear Engineering Certificate from the Oak Ridge School of Reactor Technology. As Director of APPCD in Research Triangle Park, North Carolina, he is responsible for R,D & D for methods and technologies for controlling and characterizing air pollution from major sources. He has been a key agency expert in air pollution control for over 30 years; he has been the recipient of a gold medal, four EPA bronze medals for his accomplishments in the air pollution control field. He has also received the President's Meritorious Executive Award on two separate occasions. He played the leadership role in the development and demonstration of sulfur dioxide pollution control technology for coal-fired boilers, which has been the mainstay of SO2 control worldwide. An author of many scientific papers on air pollution control, he has been a frequent speaker before technical societies and conferences and has chaired numerous symposia and has testified before House and Senate Committees on air pollution control. He has briefed five EPA Administrators on various aspects of pollution control from power plants. Before assuming his current position at Research Triangle Park, Mr. Princiotta was Director of the Energy Processes Division in EPA Headquarters in Washington, DC, where he directed EPA efforts to develop and improve technology for controlling pollution associated with the production and use of energy. His earlier experience included positions as Senior Project Engineer with Hittman Associates and Project Engineer with U.S. Atomic Energy Commission.

In recent years he has been a key expert in the control of mercury from coal-fired power plants. Under his leadership, his division has a major program aimed at understanding the fundamentals of mercury control and assessing the performance of mercury control technologies. Most recently he has focused on global climate change which he considers the most important environmental issue of the century. He has analyzed the role that technology will need to play, if we are to avoid the potentially catastrophic impacts associated with an unconstrained and uncontrolled use of energy.

Dr. Veronika Rabl is an internationally recognized expert in energy efficiency, demand response, and electricity markets. During her career she provided technical and business leadership for design, analysis, engineering, and implementation of energy technologies and programs in all sectors of the economy. She has authored numerous papers on these topics and has been an invited speaker and lecturer at many energy-related events. Until 2002 she served as Director and General Manager, Retail Energy Products and Services, at the Electric Power Research Institute (EPRI), leading the product portfolio strategy for retail and power markets. During her career at EPRI, Dr. Rabl directed a range of technical and business areas, including strategic planning, market research, marketing, power quality, distribution systems, and metering. She joined EPRI in 1981 to create a load management technology portfolio, developing thermal storage systems, energy management and load control equipment, home automation, communication systems, and customer interface products. Currently, she is an independent consultant specializing in energy efficiency, demand response, and greenhouse gas mitigation strategies and their implications for design and operation of the power system. Dr. Rabl's most recent work includes group leadership and preparation of demand management recommendations for the Virginia State Corporation Commission; a comprehensive examination of energy conservation effects of distribution voltage reduction; a critical analysis/compilation of data on CO2 mitigation costs in all sectors of the economy; and an assessment of carbon tax and/or carbon trading impacts on markets for electric and hybrid vehicles. She is Secretary of the IEEE Power System Planning and Implementation Committee, and an IEEE project team member of the Engineering Founder Societies' Technology for Carbon Management Grand Challenge Initiative. October 2009.

Ian Sadler studied natural sciences at Cambridge University England and graduated with a first-class honors degree followed by a master's from Cambridge. He joined the iron and steel industry in 1972 and quickly became one of the youngest foundry managers in the world. He has held positions of increasing technical and managerial responsibility for nearly three decades. He is currently president of Miller Centrifugal Casting Co., Cecil, Pa., and is a past president of the Iron & Steel Society. Miller Centrifugal Casting manufactures a wide range of rolling mill sleeves for the hot rolling of long products and seamless pipe.

Professor Glenn L. Schrader, who has been head of the department of chemical and environmental engineering since he joined UA in 2006, is the College of Engineering's new associate dean for research.

Before joining UA, Schrader spent more than 25 years on the faculty of the department of chemical engineering at Iowa State University, where he became a professor in 1984. He returned to his undergraduate alma mater in 1980 after a period as an associate professor at the University of Delaware, where he began his academic career. Schrader received his doctorate from the University of Wisconsin in 1976. He has been named an honorary faculty member at the University of Queensland and has spent sabbaticals as a royal fellow at the Norwegian Institute for Technology in Trondheim, Norway, and as an Australian Research Council fellow at the University of Sydney.

Schrader's research interests include catalysis and fundamental surface chemistry for energy-efficient processing and pollution-control materials; chemical vapor deposition and reactive sputtering for thin films used in the solar energy and semiconductor industries; sustainable engineered systems for alternative energy, water, and materials resources; and renewable feedstocks for chemicals and bioproducts. He has authored more than 100 scientific publications in these areas, and has graduated 28 doctoral and 18 master's students since 1976.

During his 30-plus years in academic research, Schrader has acquired substantial experience in government and industrial research programs. In 2002-2006, he directed the catalysis and biocatalysis program in the Chemical, Bioengineering, Environmental, and Transport Systems division of the National Science Foundation's Directorate for Engineering in Washington, D.C. During this time, he also gained major responsibilities for engineering research centers, nanotechnology, major research instrumentation, and engineering education programs. Several of these activities involved collaborative efforts with other federal funding agencies, such as the Environmental Protection Agency, the National Institute of Standards and Technology, and the departments of Defense and Energy.

From 1980 to 2004, Schrader was a senior chemical engineer in the Ames Laboratory, a DOE research facility run by Iowa State University. He also managed the interdisciplinary program for Iowa State's Center for the Molecular Design of Interfacial Materials, which involved a consortium of about 15 companies spanning the chemical firms, thin-film manufacturers, consumer product companies, and environmental consulting groups. Several NSF and DOE Small Business Innovation Research and Small Business Technology Transfer programs were successfully completed through this center. International collaborations included joint research programs and graduate and undergraduate student exchanges in eight countries in Asia, Australia, and Europe.

Schrader's industrial experience includes stints as a research and development engineer for 3M (medical products), Tektronix (integrated circuit manufacturing), and Kemin Industries (nutraceutical processing for food additives). He has served as a consultant with nearly a dozen companies for much of his professional career. In addition, he took industry sabbaticals in 1986 and 1994 for yearlong research and development activities with industrial collaborators and sponsors.

Darlene Schuster is the Executive Director of the Institute for Sustainability, an AIChE Technological Community, where she oversaw the development of the industry, membership and youth-focused entities formed to advance the science and state of sustainability. Previously she served as the Senior Director of Institute Alliances and Director of Government Relations for AIChE and as a Science Policy Fellow for the American Chemical Society, where she worked to educate congressional staff and Congress on technical policy issues. Dr. Schuster was awarded the 2004 Technical Achievement Award from the Central Pennsylvania Engineers Council in part for contributions to novel technology product development and commercialization by her company, DP Group, Inc.

Previously, Dr. Schuster was the Clare Boothe Luce Chair of Chemical Engineering at Bucknell University, and an Engineer, Senior Engineer, and Research Engineer with Gulf Oil Production Research, which subsequently became Chevron Oil Field Research Company. Dr. Schuster holds a BSChE (WVU), MSChE (University of Pittsburgh),and PhD. (West Virginia University).

As a professor, Dr. Schuster integrated design methodology and systems analysis into chemical kinetics, process control, the freshman engineering program, statistics, transport phenomena courses and introduced new courses on fluidization, particle technology, waste minimization, and pollution prevention and incorporating societal ethics with engineering design. She also coordinated the team taught, multidisciplinary freshman engineering program. In industry, she served as the Gulf Oil and then Chevron member of the American Petroleum Institute Committee on Static Petroleum Measurement and Committee on Dynamic Petroleum measurement and chaired a working group on statistics for the Manuel on Petroleum Measurement Standards. Recently, she was as a Co-PI on the NSF Active Chemistry curriculum project; a novel high school chemistry curriculum taught from a design perspective, and is the program manager for the United Engineering Foundation project on development of the AIChE Sustainability Index--a benchmark for industry, and the Founder Society Technology for Carbon Management project.

Barbara Toole O'Neil. Ms. Toole O'Neil has over 25 years of experience in environmental projects as a research manager, regulator, and lead engineer focusing on climate, air and multi-media issues for industries as diverse as power generation and dairies. Ms. Toole O'Neil is a principal consultant with Det Norske Veritas, leading the US verification/validation services area. In addition, she has worked on air toxics issues for power generation equipment and ambient monitoring for 15 years with a focus on mercury and fuels. She is a published expert on trace elements in fuels and combustion. While at EPA, Ms. Toole O'Neil was a credentialed enforcement inspector and participated in resolving energy issues during the Energy Crisis in California in 2000-2002. She is a registered Qualified Environmental Professional and a Certified Hazardous Materials Manager and has degrees in Chemistry and Chemical Engineering.

Jianhui Wang received his B.S. degree in management science and engineering and a Master's degree in technical economics and management from North China Electric Power University, China, in 2001 and 2004, respectively, and his Ph.D. in electrical engineering from Illinois Institute of Technology, USA, in 2007. Presently, he is a computational engineer — energy systems with the Center for Energy, Environmental, and Economic Systems Analysis (CEEESA) at Argonne National Laboratory. He is chair of the IEEE Power & Energy Society (PES) power system operation methods subcommittee and co-chair of an IEEE task force on integration of wind and solar power into power system operations. He is author of more than 40 journal and conference publications. His papers have been published in leading energy economics and engineering journals including Energy, Energy Policy and IEEE transactions on power systems. His research interests include energy economics and policy, agent-based modeling and simulation, electric power systems optimization and economics and climate change.

Richard N. Wright is the volunteer director of the infrastructure community initiative on Practice, Education and Research for Sustainable Infrastructure (PERSI). He represents the American Society of Civil Engineers (ASCE) in the Engineering Founder Societies' Carbon Management Project, and the program committee for the workshop Engineering Solutions for Sustainability: Materials and Resources. He is a distinguished member of the American Society of Civil Engineers (ASCE), member of the National Academy of Engineering, fellow of the American Association for the Advancement of Science, and member of ASCE's Committee on Sustainability. He retired as director of the Building and Fire Research Laboratory of the National Institute of Standards and Technology and was Professor of Civil Engineering at the University of Illinois at Urbana-Champaign. He received bachelor's and master's degrees from Syracuse University, and the Ph.D. from the University of Illinois at Urbana-Champaign, all in Civil Engineering. He registered as Civil Engineer in New York and Structural Engineer in Illinois. He has been chairman of the Board on Infrastructure and the Constructed Environment of the National Academies; co-chairman of the Subcommittee on Construction and Building of the National Science and Technology Council; president of the International Council for Research and Innovation in Building and Construction (CIB); and president of the Liaison Committee of International Civil Engineering Organizations.

Robert C. Wible is the principal of Robert Wible and Associates and the founder and is currently the Project Manager of the Alliance for Building Regulatory Reform in the Digital Age at FIATECH (the FIATECH Streamlining Project). The Alliance is a public-private partnership comprised of 40 national associations and government agencies. The Alliance was formed in July, 2001 to assist state and local governments in enhancing economic competitiveness and public safety by promoting more effective and efficient administration and enforcement of building codes and standards. Over the past seven years for the Alliance, Robert Wible has written and produced a number of technical materials, model enabling legislation, model procurement requirements, and produced several Guides designed to promote regulatory streamlining and effective uses of information technology in the building regulatory process.

Wible and Associates, which Mr. Wible founded in 2006, Robert Wible has assisted individual state and local governments with identifying areas in need of regulatory streamlining, building stakeholder/jurisdiction streamlining teams, and identifying and applying information technology to appropriate aspects of their building codes and standards regulatory processes. This work has included consulting on helping jurisdictions identify and build stakeholder support for regulatory streamlining and applying IT , identifying and sharing streamlining and IT best practices, testifying before legislative bodies on the need for streamlining and IT, and guiding procurement processes.

Mr. Wible has published numerous articles on IT and streamlining including the International Code Council's Building Safety Journal December, 2008 feature article: "Keeping Building Departments Ahead of the Curve," and wrote, produced and published for the U.S. Department of Housing and Urban Development in 2006 the widely used, "Guide to More Effective and Efficient Building Regulatory Processes Through Information Technology." Recent clients of Robert Wible & Associates have included: Fairfax County, Virginia; the U.S. Department of Energy; U.S. Department of Housing and Urban Development ; the States of California Office of Emergency Services; Louisiana State Uniform Construction Code Council; and Oregon Department of Consumer and Business Services, Building Codes Division. Funded under a U.S. Department of Homeland Security grant, the State of California project included the successful demonstrations in August and November, 2008 of interoperability of remote field inspection technology to conduct damage assessment reports. The State of California Emergency Management Agency is considering building a statewide network using this system during 2010-2011.

Working within FIATECH, a not for profit consortium affiliated with the University of Texas, Mr. Wible serves as their Streamlining Project Manager and is charged with coordinating private sector support for government use of information technology in building regulatory and land use programs including the use of electronic plan review technology. Among current projects with FIATECH are the development with the International Code Council of an ICC Guideline for single plan reviews for replicable buildings and a project with the U.S. General Services agency to bring Building Information Modeling (BIM) to plan review processes.

From 1977 through 2005 Robert Wible, worked for the National Conference of States on Building Codes and Standards, Inc,(NCSBS) serving as its Executive Director from 1984 through 2005. As Executive Director Mr. Wible managed a national non-profit association affiliated with the National Governors Association and representing state and local government building code and public safety interests. Mr. Wible was responsible for a staff of 60 employees, founded an interstate compact to regulate industrialized modular buildings, Industrialized Buildings Commission –IBC; oversaw the NCSBCS administration of the plan review and inspection services for the U.S. Department of Housing and Urban Development Federal Manufactured Housing Program; conceptualized and founded National Building Safety Week, and obtained and managed over $100 million in contracts and grants from federal agencies and private sector firms and established a national clearinghouse for best practices in building codes administration and enforcement which later became the foundation for the Alliance for Building Regulatory Reform in the Digital Age. Prior to 1977, Mr. Wible served as a U.S. Foreign Service Officer in India and Nepal.

In 2007, McGraw-Hill Company released Mr. Wible's latest publication a book entitled, "Architectural Security Codes and Guidelines: Best Practices for Today's Construction Challenges." In addition to looking at construction in the post 9-ll environment this new publication includes a look at the nation's building regulatory system in the year 2025. Mr. Wible’s book is currently being translated for release by McGraw-Hill in Chinese.