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SPEAKER BIOGRAPHIES

Doug Arent, Executive Director, Joint Institute for Strategic Energy Analysis, National Renewable Energy Laboratory. Arent specializes in strategic planning and financial analysis competencies, clean energy technologies and energy and water issues, as well as international and governmental policies. In addition to his responsibilities at the National Renewable Energy Laboratory, he is a Senior Visiting Fellow at the Center for Strategic and International Studies. Arent was recently appointed as a Coordinating Lead Author for the 5th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). In addition, he is a member of the Policy Subcommittee of the National Petroleum Council Study on Prudent Development of North America Natural Gas and Oil Resources and, from 2008 to 2010, served on the National Academy of Sciences panel on *Limiting the Magnitude of Future Climate Change*, as well as the Executive Council of the U.S. Association of Energy Economists. Arent is a member of the Keystone Energy Board and is on the Advisory Board of E+Co, a public purpose investment company that supports sustainable development across the globe. He is also a member of the steering committee for the American Academy study *The Alternative Energy Future.*

Leslie C. Berlowitz, President and William T. Golden Chair, American Academy of Arts and Sciences. At the American Academy, an independent policy research institute and one of the nation's oldest learned societies, Berlowitz oversees its five research areas: science and technology policy; global security; social policy and American institutions; the humanities and culture; and education. Berlowitz established two residential fellowship programs for young scholars: the Hellman Fellowship in Science and Technology Policy and the Visiting Scholars Program. She was a member of the committee that prepared the Academy's 2008 report, *ARISE: Advancing Research In Science and Engineering: Investing in Early-Career Scientists and High-Risk, High-Reward Research.* Berlowitz has coedited *Reflecting on the Humanities*, *Daedalus*, (MIT Press, 2009) with Patricia Meyer Spacks; *Restoring Trust in American Business* (MIT Press, 2005) with Jay W. Lorsch and Andy Zelleke; *America in Theory* (Oxford University Press, 1988) with Denis Donaghue and Louis Menand; and *Greenwich Village: Culture and Counterculture* (Rutgers University Press, 1990) with Richard Eric Beard. Before joining the Academy in 1996, she was vice president for Academic Advancement at New York University. A Fellow of the American Academy, she was named an honorary Doctor of Humane Letters at Northeastern University in May 2011.

Juliana Birkhoff, Vice President of Programs and Practice, RESOLVE. An experienced trainer and teacher, Birkhoff has designed and conducted a wide variety of negotiation, collaboration, and conflict resolution trainings for non-profit, governmental agencies, and advocacy groups. Her training focuses on helping technical and scientific experts to work productively in collaborative processes and to expand the capacities of stakeholders, agency conflict resolution specialists, and team leaders to handle project leadership, collaboration, and conflict resolution. Birkhoff has

extensive background in multi-disciplinary research on conflict and conflict analysis, with a particular focus on using collaborative decision-making processes in politically charged and technically complex issues. Her previous research projects include best practices for integrating complex scientific and technical information into collaborative processes and how stakeholders and team leaders integrate different ways of knowing in collaborative processes.

Marilyn Brown, Professor, School of Public Policy, Georgia Institute of Technology. Prior to joining Georgia Institute of Technology in 2006, Brown held various leadership positions at Oak Ridge National Laboratory (ORNL). Her research focuses on the design and impact of policies aimed at accelerating the development and deployment of sustainable energy technologies. Brown has led several energy technology and policy scenario studies and is a national leader in the analysis and interpretation of energy futures in the United States. She is the author of *Climate Change and Global Energy Security* (MIT Press) and more than 200 other publications, and edited *Thirteen energy myths* (Springer). Her work has had significant visibility in the policy arena as evidenced by her numerous briefings and testimonies before committees of both the U.S. House of Representatives and the U.S. Senate. Brown has served on four committees of the National Academies of Sciences and in October 2010 she was sworn onto the board of directors of the Tennessee Valley Authority, the nation's largest public power provider, following her nomination by President Barack Obama.

Jonathan Cannon, Director of the Environmental and Land Use Law Program and Blaine T. Phillips Distinguished Professor of Environmental Law, University of Virginia School of Law. Before coming to the University of Virginia in 1998, Cannon held positions at the U.S. Environmental Protection Agency (EPA) as General Counsel from 1995-1998 as well as assistant administrator for Administration and Resources Management and chief financial officer from 1993-1995. Cannon has also been in private law practice and served in previous positions at EPA as a senior career executive. He currently serves on the National Academy of Sciences (NAS) Board of Environmental Studies and Toxicology and was a member of the NAS committee on *American's Climate Choices* that recently released its final report. Cannon's areas of scholarly interest include the design and implementation of environmental programs, the Supreme Court's environmental jurisprudence, protection of watersheds and landscapes, and climate change.

Ann Carlson, Shirley Shapiro Professor of Environmental Law and Faculty Director of the Emmett Center on Climate Change and the Environment, University of California, Los Angeles, School of Law. As the inaugural faculty director of the Emmet Center on Climate Change and the Environment, Carlson is also on the faculty of the UCLA Institute of the Environment. Her research in environmental law focuses on climate change law and policy, federalism and the role social norms play in affecting environmentally cooperative behavior. Her recent work involves analyzing unusual models of environmental federalism, with a focus on the unique role California plays in regulating mobile source emissions, including greenhouse gas emissions, under the Clean Air Act. Carlson's article *Takings on the Ground* was selected by the Land Use and Environmental Law Review in 2003 as one of the top ten environmental articles of the year. Carlson teaches Property, Environmental Law, and Climate Change Law and Policy and was the recipient of the 2006 Rutter Award for Excellence in Teaching. She served as the law school's academic associate dean from 2004 to 2006. She is a member of the steering committee for the American Academy study *The Alternative Energy Future*.

J. Kevin Carroll, Chief, Energy Branch, Energy Science & Water Division, Natural Resources Programs, Office of Management & Budget. Carroll has been the branch chief in Energy since September 2006. Prior to returning to OMB, Kevin was the Staff Director of the Energy Subcommittee of the House Committee on Science for three years. The Subcommittee had

jurisdiction for all non-defense R&D carried out by the Department of Energy. During his tenure as Staff Director, the Committee passed 3 reauthorization bills for DOE's R&D programs, either unanimously or by voice vote, as well several minor authorization and reauthorization bills, also unanimously or by voice vote. Before working for the Science Committee, Kevin was the Fossil Energy examiner at OMB from 1999 to 2003. He got his start in policy as a canvasser and community organizer in Connecticut.

Paul A. Centolella, Commissioner, Public Utilities Commission of Ohio. Centolella has over thirty years of experience in utilities, energy, and environmental law and economics. He serves as the vice president of the Organization of PJM States and is a member of National Association of Regulatory Utility Commissioners (NARUC) Smart Grid Working Group and the Federal Energy Regulatory Commission/NARUC Smart Response Collaborative. Centolella represents NARUC on the Electric Power Research Institute's Advisory Council and serves on the Advisory Council's Executive Committee as well as the Governing Board of the Smart Grid Interoperability Panel, an effort lead by the National Institute of Standards and Technology to accelerate the development of standards for the smart grid. Before joining the Commission, he was a Senior Economist in the Energy Solutions Group of Science Applications International Corporation where he managed projects involving the integration of information technology into electric power system operations and the design and economic analyses of energy markets and policies. He has also served at the Office of the Ohio Consumers' Counsel and has practiced law in California and Washington State.

Thomas Dietz, Assistant Vice President for Environmental Research, Professor of Sociology, and Professor of Environmental Science and Policy, Michigan State University. At Michigan State University, Dietz also holds appointments in the Animal Studies Program, was the Founding Director of the Environmental Science and Policy Program, and has served as associate dean in the Colleges of Social Science, Agriculture and Natural Resources, and Natural Science. He is currently vice chair of the panel on Advancing the Science of Climate Change of the *America's Climate Choices* study and has previously served as chair of the National Research Council Committee on Human Dimensions of Global Change as well as the Panel on Public Participation in Environmental Assessment and Decision Making. In addition, Dietz is a Fellow of the American Association for the Advancement of Science, and has been awarded the Sustainability Science Award of the Ecological Society of America. His current research examines the human driving forces of environmental change, environmental values, and the interplay between science and democracy in environmental issues. He has co-authored or co-edited eleven books and more than 100 papers and book chapters on these topics. He is a member of the steering committee for the American Academy study *The Alternative Energy Future*.

Nicholas M. Donofrio, Senior Fellow, Kauffman Foundation; former Executive Vice President of Innovation and Technology, IBM. Since joining IBM as a college co-op student in 1964 to work on the legendary IBM System/360 mainframe computing system, Donofrio held numerous technical management positions and, later, executive positions in several of IBM's product divisions until his retirement in 2008. He spent the early part of his career in integrated circuit and chip development as a designer of logic and memory chips and has led many of IBM's major development and manufacturing teams – from semiconductor and storage technologies, to microprocessors and personal computers, to IBM's entire family of servers. He was also vice chairman of the IBM International Foundation and chairman of the Board of Governors for the IBM Academy of Technology. The holder of seven technology patents, he is member of the National Academy of Engineering, and serves on many boards including the Board of Directors for the Bank of New York/Mellon, the Republic of China's Advisory Board of Science and Technology, the Board of Trustees at Rensselaer Polytechnic Institute, the Board of Directors of Liberty Mutual, and the Board of Directors of AMD. He is a Senior Fellow of the Kauffman

Foundation, a member of the U. S. Department of Energy's Secretary of Energy Advisory Board, and was appointed an IBM Fellow in 2008. In addition, Donofrio is a Fellow of the Institute for Electrical and Electronics Engineers and a Fellow of the Royal Academy of Engineering. He is also a Fellow of the American Academy.

Jeanne M. Fox, Commissioner, New Jersey Board of Public Utilities (NJBPU). At NJBPU, Fox previously served as president and a member of the Governor's cabinet from 2002 to 2010. Under her leadership, NJBPU has become a leader among states in developing clean energy policies and promoting renewable energy and energy efficiency. Prior to her appointment to the Board, Fox served as a Regional Administrator of the United States Environmental Protection Agency and as Commissioner and Deputy Commissioner of the New Jersey Department of Environmental Protection and Energy. Fox is active with the National Association of Regulatory Utility Commissioners as a member of the Board of Directors; chair of the committee on *Energy Resources and the Environment*; and a member of the committee on Critical Infrastructure and the Task Force on Climate Policy. She is also a member of the Electric Power Research Institute's Public Advisory Council on Smart Grid; the Harvard Electricity Policy Group; and the National Council on Electricity Policy, which she chaired for 5 years. She has served as President of the Mid-Atlantic Conference of Regulatory Utilities Commissioners and as a member of the National Academy of Science Panel on Public Participation in Environmental Assessment and Decision Making, the National Leadership Group on Energy Efficiency, and the Advisory Council to the Board of Directors of the Electric Power Research Institute.

Robert W. Fri, Visiting Scholar and Senior Fellow Emeritus at Resources for the Future. Fri has served as Director of the National Museum of Natural History, President of Resources for the Future, and Deputy Administrator of both the Environmental Protection Agency and the Energy Research and Development Administration. He is currently a director of American Electric Power Company, vice-chair and a director of the Electric Power Research Institute, a trustee and vice-chair of Science Service, Inc., and a member of the National Petroleum Council. Fri is active with the National Academies, where he is National Associate, vice-chair of the Board on Energy and Environmental Systems, and recently chaired a National Academies summit on *America's Energy Future*. In addition, he chaired the Panel on Limiting the Magnitude of Future Climate Change for the NAS study *America's Climate Choice*s. He is a Fellow of the American Academy and chairs the American Academy study *The Alternative Energy Future*.

Kelly Sims Gallagher, Associate Professor of Energy and Environmental Policy, The Fletcher School, Tufts University. Gallagher directs the Energy, Climate, and Innovation research program in the Center for International Environment and Resource Policy at the Fletcher School. She is also Senior Associate and a member of the Board of Directors of the Belfer Center for Science and International Affairs at Harvard University, where she previously directed the Energy Technology Innovation Policy research group. Broadly, she focuses on energy and climate policy in both the United States and China. She is particularly interested in the role of policy in spurring the development and deployment of cleaner and more efficient energy technologies, domestically and internationally. Gallagher speaks Spanish and basic Mandarin Chinese and is the author of China Shifts Gears: Automakers, Oil, Pollution, and Development (The MIT Press 2006), editor of Acting in Time on Energy Policy (Brookings Institution Press 2009), and numerous academic articles and policy reports. In addition, she is a member of the steering committee for the American Academy study *The Alternative Energy Future*.

Myron Gutmann, Assistant Director for Social, Behavioral, and Economic Sciences, National Science Foundation. In addition to his responsibilities with NSF's Social, Behavioral, and Economic Sciences Directorate, he is also Professor of History and Information as well as Research

Professor in the Institute for Social Research at the University of Michigan. Prior to joining NSF, he was director of the Inter-university Consortium for Political and Social Research (ICPSR). Gutmann has broad interests in interdisciplinary historical research, especially health, population, economy, and the environment. As Director of ICPSR, he was a leader in the archiving and dissemination of electronic research materials related to society, population, and health, with a special interest in the protection of respondent confidentiality. He has written or edited five books and more than eighty articles and chapters. Gutmann has served on a number of national and international advisory committees and editorial boards.

Holmes Hummel, Senior Policy Advisor for Policy & International Affairs, U.S. Department of Energy**.** As a senior policy advisor in the Department of Energy, Hummel attends to the implementation of a wide range of executive authorities to advance national energy policy objectives. The *Blueprint for a Secure Energy Future* recently issued by the White House presents a multi-agency view of that activity landscape, which includes initiatives to engage Americans in rapid adoption of clean energy technologies. In addition to prior work in the cleantech sector, she previously served as a Congressional Science Fellow and taught at the Energy Resource Group at Univerisity of California, Berkeley. Her prior research focused on exploring energy technology and policy implications of paths to climate stabilization.

Steven E. Koonin, Under Secretary for Science, U.S. Department of Energy. As the second Undersecretary for Science in the Department of Energy (DOE), Koonin brings to the post a distinguished career as a university professor and administrator at the California Institute of Technology (Caltech) as well as experience in industry. Koonin joined the Caltech faculty in 1975, was a research fellow at the Neils Bohr Institute during 1976–1977, and was an Alfred P. Sloan Foundation Fellow during 1977–1979. He became a professor of theoretical physics at Caltech in 1981 and served as chairman of the faculty from 1989 - 1991. Koonin was the seventh provost of Caltech and, in that capacity, he was involved in identifying and recruiting 1/3 of the Institute's professorial faculty and left an enduring legacy of academic and research initiatives in the biological, physical, earth, and social sciences, as well as the planning and development of the Thirty-Meter Telescope project. As the chief scientist at BP between 2004 and early 2009, Koonin developed the long-range technology strategy for alternative and renewable energy sources. He managed the firm's university-based research programs and played a central role in establishing the Energy Biosciences Institute at the University of California Berkeley, the Lawrence Berkeley National Laboratory, and the University of Illinois at Urbana-Champaign. Koonin was a member and past chair of the JASON Study Group, advising the U.S. Government on technical matters of national security. He has served on numerous advisory committees for the DOE, the National Science Foundation, and the Department of Defense, including the Defense Science Board and the CNO's Executive Panel. His research interests have included nuclear astrophysics; theoretical nuclear, computational, and many-body physics; and global environmental science. He has been involved in scientific computing throughout his career and is a strong advocate for research into renewable energies and alternate fuel sources. His academic research in computational and nuclear physics has impacted the direction of science both nationally and internationally. He has supervised more than 25 PhD students, produced more than 200 peer-reviewed research publications, and authored or edited 3 books, including a pioneering textbook on Computational Physics in 1985. He is a member of the Council on Foreign Relations and a fellow of the American Physical Society, the American Association for the Advancement of Science, and was elected to membership in the National Academy of Sciences in 2010. He is a Fellow of the American Academy.

Alan J. Krupnick, Research Director, Senior Fellow and Director, Center for Energy Economics and Policy, Resources for the Future. As the director of Center for Energy Economics and Policy, Krupnick works with the full complement of Center researchers to establish and carry out the

Center's research agenda. His own research focuses on analyzing environmental and energy issues, in particular, the benefits, costs and design of pollution and energy policies, both in the United States and in developing countries. Krupnick was lead author for the *Toward a New National Energy Policy: Assessing the Options* study, examining the costs and cost-effectiveness of a range of federal energy policy choices in both the transportation and electricity sectors. His primary research methodology is in the development and analysis of stated preference surveys, but he has also undertaken research on natural gas supply and impact on energy prices and policies; the costs and benefits of converting the U.S. heavy-duty truck fleet to run on liquefied natural gas; and the costs and benefits of expanded regulation around deepwater oil drilling. He has been a consultant to state governments, federal agencies, private corporations, the Canadian government, the European Union, the World Health Organization, and the World Bank. He co-chaired an advisory committee that counseled the U.S. Environmental Protection Agency (EPA) on new ozone and particulate standards. Krupnick also served as senior economist on the President's Council of Economic Advisers, advising the Clinton administration on environmental and natural resource policy issues. He is a regular member of expert committees for the National Academy of Sciences and the EPA.

John A. "Skip" Laitner, Director of Economic and Social Analysis, American Council for an Energy-Efficient Economy. Laitner previously served as a Senior Economist for Technology Policy for the Environmental Protection Agency (EPA), but chose to leave the federal service in 2006 in order to focus on his research, which is aimed at developing a more robust technology and behavioral characterization of energy efficiency resources for energy and climate policy analyses as well as within economic policy models. In 1998, he was awarded EPA's Gold Medal for his work with a team of other EPA economists to evaluate the impact of different strategies that might assist in the implementation of greenhouse gas emissions reduction policies. In 2003, the U.S. Combined Heat and Power Association gave him an award to acknowledge his contributions to the policy development of that industry. Laitner's 2004 paper, *How Far Energy Efficiency*? catalyzed new research into the proper the characterization of efficiency as a long-term resource. Author of more than 260 reports, journal articles, and book chapters, he has 40 years of involvement in the energy, environmental, and economic policy arenas.

Jennifer Layke, Director, Institute for Building Efficiency, Johnson Controls Inc. As director of Johnson Controls' Institute for Building Efficiency, a global initiative to provide information and analyses of technologies, policies, and practices in high performance buildings and smart energy systems from a practitioner's perspective, Layke leads the Institute's research agenda and collaborations with a network of global experts on topical areas including: commercial building efficiency, smart buildings and the smart grid, green building design, and renewable energy technologies. Prior to joining Johnson Controls, she was the deputy director of Climate and Energy Program at the World Resources Institute (WRI) where she founded The Green Power Market Development Group in 2001, which, by 2009, had supported the development of 1000 MW of new, cost-competitive renewable energy projects in the United States for corporate use. Her work also included analysis of U.S. climate policy design options as lead WRI staff negotiator in the U.S. Climate Action Partnership's Call for Action and subsequent *Blueprint for Legislative Action*. Layke's international experience also includes consulting for the World Bank and the U.S. Environmental Protection Agency on technology transfer under the Montreal Protocol. She is an accomplished author on energy and climate action as well as founder of Beyond Grey Pinstripes – a sustainability ranking of business schools conducted in partnership with the Aspen Institute.

M. Granger Morgan, Professor and Head, Department of Engineering and Public Policy, Carnegie Mellon University. At Carnegie Mellon University, Morgan is also the University and Lord Chair Professor in Engineering and holds academic appointments in the Department of Electrical and Computer Engineering and in The H. John Heinz III School of Public Policy and

Management. His research addresses problems in science, technology, and public policy with a particular focus on energy, environmental systems, climate change, and risk analysis. Much of his work has involved the development and demonstration of methods to characterize and treat uncertainty in quantitative policy analysis. Also at Carnegie Mellon, Morgan directs the National Science Foundation Center on Climate and Energy Decision Making as well as the CCSReg Project. With Lester Lave, he co-directs the Carnegie Mellon Electricity Industry Center. Morgan is a Member of the National Academy of Sciences and a Fellow of the American Association for the Advancement of Science, Institute of Electrical and Electronics Engineer, and the Society for Risk Analysis. He is a member of the steering committee for the American Academy study *The Alternative Energy Future.*

Robert R. Nordhaus, Member, Van Ness Feldman. Nordhaus specializes in federal energy and environmental regulation. He is a member of the Washington, D.C. law firm of Van Ness Feldman, P.C., and is also a member of the adjunct faculty at the George Washington University Law School, where he teaches energy and environmental law. Bob originally joined Van Ness Feldman in 1981, after serving three years as the Federal Energy Regulatory Commission's first General Counsel. He practiced with the firm until 1993, when he was appointed General Counsel of the Department of Energy by President Clinton. He rejoined the firm in 1997.

Margo T. Oge, Director, Office of Transportation and Air Quality, U.S. Environmental Protection Agency. Oge has been with the Environmental Protection Agency (EPA) since 1980 where she has held various management positions. As director, she has been instrumental in the EPA's efforts to reduce air pollution and greenhouse gas emissions from the U.S. transportation sector. Under her leadership, EPA finalized two significant rules in 2010: the Agency's first-ever national greenhouse gas emission standards for cars and trucks and the final expanded renewable fuels standard, which will significantly increase the volume of biofuels in our nation's fuel supply. Other successes completed by EPA under Oge's guidance include the clean Tier 2 vehicle and gasoline sulfur program, the 2007 clean diesel truck and bus program, and the clean non-road diesel engine and fuels program. To recognize her leadership in shepherding the Tier 2 and heavy duty diesel rules to fruition, Oge was the first nonpolitical appointee to be awarded the Woman of Achievement Award from the Women's Council on Energy and the Environment. In addition, she was a recipient of the 2004 Presidential Distinguished Executive Rank Award for her outstanding leadership on environmental transportation issues and is a previous winner of the Presidential Meritorious Award. In 2009, she received the California Air Resources Board's Haagen-Smit Clean Air Award for her efforts to protect California air quality and public health.

Edward A. (Ted) Parson, Joseph L. Sax Collegiate Professor of Law and Professor of Natural Resources and Environment, University of Michigan. Parson's research examines international environmental law and policy, the role of science and technology in public policy, and the political economy of regulation. His articles have been published in *Nature*, *Science*, *Climatic Change*, *Issues in Science and Technology*, the *Journal of Economic Literature*, and the *Annual Review of Energy and the Environment.* His most recent books are *The Science and Politics of Global Climate Change* with Andrew Dessler and *Protecting the Ozone Layer: Science and Strategy*, which won the 2004 Harold and Margaret Sprout Award of the International Studies Association. Parson has chaired and served on several senior advisory committees for the National Academy of Sciences, the U.S. Government Global Change Research Program, and other bodies, including the Synthesis Team for the U.S. National Assessment of Climate Impacts. In 2005, he was appointed to the National Advisory Board of the Union of Concerned Scientists. Parson has worked and consulted for the White House Office of Science and Technology Policy, the Office of Technology Assessment of the U.S. Congress, the Privy Council Office of the Government of Canada, the United Nations Environment Program, and the International Institute for Applied Systems

Analysis. He also spent twelve years on the faculty of Harvard's Kennedy School of Government. In former lives, he was a professional classical musician and an organizer of grassroots environmental groups.

Barry Rabe, Professor of Public Policy, University of Michigan. Also at the University of Michigan, Rabe holds appointments in the School of Natural Resources and Environment and in the Program in the Environment. He is also a non-resident senior fellow in the Governance Studies Program at the Brookings Institution. Much of his recent research examines state and regional development of policies to reduce greenhouse gases, which has been conducted in collaboration with the Brookings Institution, the Miller Center of Public Affairs at the University of Virginia, and the Pew Center on Global Climate Change. From 2008 to 2009, he was a visiting professor at the Miller Center of Public Affairs at the University of Virginia, where he organized the National Conference on Climate Governance. At Michigan, he previously served as director of the Program in the Environment and an interim dean of the School of Natural Resources and Environment. In 2006, Rabe became the first social scientist to receive a Climate Protection Award from the U.S. Environmental Protection Agency in recognition of his contribution to both scholarship and policy making and, in 2007, he received the Daniel Elazar Award for Career Contribution to the Study of Federalism from the American Political Science Association. In addition, he was named a Fellow of the National Academy of Public Administration in 2009.

Eugene (Gene) A. Rosa, Edward R. Meyer Distinguished Professor of Natural Resource and Environmental Policy and Professor of Sociology, Washington State University. At Washington State University, Rosa is also an affiliated professor of fine arts and a faculty associate in the Center for Environmental Research, Education, and Outreach. In addition, he is a Visiting Scholar at Woods Environmental Institute at Stanford University. He is a fellow of the American Association for the Advancement of Science, has served on six committees of the National Academy of Sciences, is a frequent invited speaker in the United States and abroad, and is a member of several national and international scientific advisory bodies. His principal areas of research are environmental and technological risks, human dimensions of global environmental change, science policy, and risk governance. He has published four books, over 40 book chapters and reports, and over 50 journal articles on these topics, several of which have received awards of distinction. Among his current research activities are the investigation of the impacts to human well-being from environmental threats, the development of a methodology for comparing risks across broad, previously unrelated risk domains, and further contributions to the epistemology of risk. With two other leading social scientists he is now preparing a book on risk theory and risk governance.

Maxine Savitz, General Manager for Technology Partnerships, Honeywell, Inc. (ret.) During her career at Honeywell, Savitz oversaw the development and manufacturing of innovative materials for the aerospace, transportation, and industrial sectors. From 1979-1983, she served in the capacity of Deputy Assistant Secretary for Conservation at the Department of Energy. Currently, Savitz is vice president of the National Academy of Engineering, a Fellow of the California Council on Science and Technology and was appointed to the President's Council of Advisors for Science and Technology in 2009. In addition, she is a member of Advisory Boards at Sandia, Pacific Northwest National Laboratory, and the Department of Energy, Energy Efficiency and Renewable Energy Advisory Committee and is also a member of the board of directors of the American Council for an Energy Efficient Economy and the Federation of American Scientists. Previously, Savitz served on the National Academy committee for *America's Energy Future* and as vice chair of the panel of *Energy Efficient Technologies.* She was also a member of the study committee for the American Physical Society's 2008 report: *Energy Future: Think Efficiency* and chaired the Technical Review Committee report recently issued by the American Energy Innovation Council. During the past year, she has made presentations regarding energy efficiency at Harvard University, Washington

University, MIT, and Honeywell, Int. She is a member of the steering committee for the American Academy study *The Alternative Energy Future*.

Philip R. Sharp, President, Resources for the Future. Sharp's career in public service includes ten terms as a member of the U.S. House of Representatives from Indiana and a lengthy tenure on the faculty of the John F. Kennedy School of Government and the Institute of Politics at Harvard University. During his 20-year congressional tenure from 1975 to 1995, he took key leadership roles in the development of landmark energy legislation. Sharp helped to develop a critical part of the 1990 Clean Air Act Amendments, was a driving force behind the Energy Policy Act of 1992, and served on several House committees. Currently, he serves on the board of directors of the Duke Energy Corporation and as vice chair on the board of the Energy Foundation. He was appointed to The National Academies' committee on *America's Climate Choices* and to the *Blue Ribbon Commission on America's Nuclear Future*. In addition, he serves on the National Petroleum Council which is a federal advisory committee, on the Planetary Skin Institute's Global Advisory Council, and is a member of the Massachusetts Institute of Technology (MIT) Energy Initiative External Advisory Board as well as the International Advisory Board of the Harvard Environmental Economics Program. He also chairs the External Advisory Committees for both the MIT Nuclear Fuel Cycle Study and the MIT Future of Solar Energy Study and recently served as the congressional chair for the National Commission on Energy Policy.

Paul C. Stern, Study Director, National Research Council. Stern's research interests include the determinants of environmentally significant behavior, particularly at the individual level; participatory processes for informing environmental decision making; and the governance of environmental resources and risks. He is a long-time contributor to behavioral science research on energy consumption and recently served on the American Psychological Association's *Task Force on the Interface between Psychology and Global Climate Change*. He is a fellow of the American Association for the Advancement of Science and the American Psychological Association. He is a member of the American Academy's *Alternative Energy Future* committee.

James L. Sweeney, Director of the Precourt Energy Efficiency Center and Professor of Management Science and Engineering, Stanford University. Sweeney's professional activities focus on economic policy and analysis, particularly in energy, natural resources, and the environment. He currently is Senior Fellow of: the Stanford Institute for Economic Policy Research; Hoover Institution on War, Revolution and Peace; Freeman Spogli Institute for International Studies; Woods Institute for the Environment; and Precourt Institute for Energy. Also, Sweeney is a Senior Fellow of the U.S. Association for Energy Economics, a lifetime National Associate of the National Academies, a council member and Senior Fellow of the California Council on Science and Technology, and a member of the External Advisory Council of the National Renewable Energy Laboratory. At Stanford, he has served as director of the Energy Modeling Forum, chairman of the Institute for Energy Studies, and director of the Center for Economic Policy Research (now the Stanford Institute for Economic Policy Research). In addition, he has served as a member of numerous committees of the National Research Council and, in the early 1970's, was director of the Office of Energy Systems Modeling and Forecasting of the U.S. Federal Energy Administration. He is a member of the American Academy's *Alternative Energy Future* committee.

Michael P. Vandenbergh, Professor of Law and Tarkington Chair in Teaching Excellence, Vanderbilt University Law School. Vandenbergh is a leading scholar in environmental and energy law whose research explores the relationship between formal legal regulation and informal social regulation of individual and corporate behavior. His work has appeared in leading journals, including the *Columbia Law Review*, the *Harvard Environmental Law Review,* the *Michigan Law Review*, *Nature Climate Change*, the *New York University Law Review*, the *Proceedings of the*

National Academy of Sciences, and the *Stanford Environmental Law Journal.* Before joining Vanderbilt's law faculty, Vandenbergh was a partner at Latham & Watkins in Washington, D.C. He began his career as a law clerk to Judge Edward R. Becker of the United States Court of Appeals for the Third Circuit in 1987-88 and served as chief of staff of the Environmental Protection Agency from 1993-1995. In addition to directing Vanderbilt's Climate Change Research Network, Vandenbergh serves as director of the law school's Environmental Law Program. A recipient of the Hall-Hartman Teaching Award, he teaches courses in environmental law, energy, and property. He has also been a visiting professor at the University of Chicago Law School and at Harvard Law School. He is a member of the American Academy's *Alternative Energy Future* committee.

Marsha L. Walton, Senior Project Manager, New York State Energy Research and Development Authority. Walton has been at New York State Energy Research and Development Authority (NYSERDA) in Albany NY, since 1992, where she has worked on energy efficiency and exploratory research. She directs NYSERDA's Behavior Research Program where she collaborates with a team of researchers to apply behavioral insights from academic disciplines such as social psychology and behavioral economics to programs designed to promote energy efficiency and renewable energy in New York State. Walton also manages NYSERDA's Lighting Research Program. Other areas of her research include climate change communication to motivate individuals and businesses to reduce their carbon footprints.

Charlie Wilson, Lecturer in Energy and Climate Change Research, Tyndall Centre for Climate Change Research, University of East Anglia (UK). Wilson's research interests lie at the intersection between innovation, behavior, and policy in the field of energy and climate change mitigation. At a micro-scale, this includes work on individual and household decision making and behavior, with a particular emphasis on energy efficiency. At a macro-scale, this includes work on innovation systems and technological change, with a particular emphasis on low carbon energy supply technologies.