RAND Energy & Environment Researcher Guide

For more information, contact Shirley Ruhe, Director of Congressional Relations, at 703-413-1100 x5632 (Shirley_Ruhe@rand.org).

The RAND Corporation has been conducting research for federal, state, nonprofit, and private-sector entities on the interrelated issues of the environment, natural resources, energy, and economic development since the 1960s. Today's research addresses a range of topics of relevance to U.S. and international audiences, including environmental quality and regulation, energy resources and systems, water resources and systems, climate change, and natural hazards and disasters. Listed below are RAND research staff who work on energy and environment projects; note, however, that they all engage in multidisciplinary collaborations across a wider spectrum of research areas—a hallmark of RAND from its earliest days.

Debra Knopman, Ph.D.
Vice President and Director, RAND Infrastructure, Safety, and Environment

Dr. Knopman's research background is in hydrology, environmental and natural resources policy, systems analysis, and public administration. From 1997 to 2003, she was a member of the Nuclear Waste Technical Review Board, which has oversight of the Yucca Mountain scientific and engineering program. She served as Deputy Assistant Secretary for Water and Science at the U.S. Department of the Interior, Chief of the Branch of Systems Analysis in the U.S. Geological Survey, professional staff member on the U.S. Senate Committee on Environment and Public Works, and legislative assistant for energy and environmental issues to Senator Daniel P. Moynihan.

Keith Crane, Ph.D.
Director, Environment, Energy, and Economic Development Program

Dr. Crane works on issues pertaining to the environment, energy and oil markets, Iraq and the Middle East, China, international trade, the transition economies of Eastern Europe and the Commonwealth of Independent States, and post-conflict nation-building. In 2006, he served on the Economy and Reconstruction Working Group for the Baker–Hamilton Iraq Study Group. In the fall of 2003, Dr. Crane served as an economic policy advisor to the Coalition Provisional Authority in Baghdad, where he worked on energy policy, among other issues. Prior to rejoining RAND in February 2002, Dr. Crane was

chief operating officer and director of research at PlanEcon, Inc., a Washington, D.C.–based research and consulting firm focusing on Central and Eastern Europe and the former Soviet republics. As director of research, he was responsible for PlanEcon's forecasts and consulting and had special responsibility for that company's East European automotive service. During his tenure at PlanEcon, Dr. Crane provided analysis and economic forecasts used in more than 100 major investments in the region. Dr. Crane also writes extensively on transition issues and international economics in policy and academic journals. Dr. Crane has lived for several years in Eastern Europe and is fluent in Hungarian and Polish.

Martin Wachs, Ph.D.
Director, Transportation, Space, and Technology Program

Prior to joining RAND in 2005, Dr. Wachs was Professor of Civil & Environmental Engineering and Professor of City & Regional Planning at the University of California, Berkeley, where he also was director of the Institute of Transportation Studies. He had previously spent 25 years at UCLA, where he served three terms as chairman of the Department of Urban Planning. Dr. Wachs is the author of 160 articles and four books on subjects pertaining to relationships among transportation, land use, and air quality; transportation needs of the elderly; techniques for the evaluation of transportation systems; and the use of performance measurement in transportation planning. His research also addresses issues of equity in transportation policy; problems of crime in public transit systems; and the response of transportation systems to natural disasters, including earthquakes. His most recent work focuses on transportation finance in relation to planning and policy.

James Bartis, Ph.D.
Senior Policy Researcher

Dr. Bartis has more than 25 years of experience in policy analyses and technical assessments in energy and national security. His recent energy research topics include development prospects for coal-to-liquids and oil shale, energy and national security, Qatar's natural gas-to-diesel plants, Japan's energy policies, planning methods for long-range energy research and development, critical mining technologies, fuel cell development options, and national response options during international energy emergencies. Dr. Bartis joined the U.S. Department of Energy (DOE) in 1978 shortly after it was established. He served in the Office of Fossil Energy, where he directed program planning and technology assessments covering the coal, oil, oil shale, and gas research and development programs. He also worked in DOE's main policy office, where he directed the Divisions of Fossil Energy and Environment. During the George H. W. Bush and Clinton administrations, he was a member of the Industry Sector Advisory Committee on Energy for Trade Policy Matters, which served the Secretary of Commerce and U.S. Trade Representative.

Frank Camm, Ph.D.
Senior Economist

Dr. Camm has analyzed how tax, pricing, and regulatory policies affect decisions in the petroleum, electricity, and chemical industries with respect to public goals for energy use and for the environment. He has also led the final round of RAND's multiyear program of analysis on controlling chemicals that deplete stratospheric ozone. As part of a U.S. diplomatic team in 1986, Dr. Camm used RAND's studies to complete the analytic case that led to international approval in 1987 of the Montreal Protocol on Substances That Deplete the Ozone Layer. More recently, he led a team that identified best practices in environmental management within complex global corporations, with implications for environmentally sensitive activities of the U.S. Department of Defense.

Gary Cecchine, Ph.D.
Natural Scientist

Dr. Cecchine leads and participates in technical and policy research at RAND on a broad range of topics, including environmental science, health, homeland security, and management systems. He is currently leading an effort to examine the role of the Army in providing civil support following natural disasters and terrorist attacks, and he is also leading a strategic review of occupational health policies for the U.S. Department of Defense. He recently completed a strategic review of emergency preparedness for a large U.S. government organization. Other recent projects he has led include an analysis of the relationships among globalization, infectious disease, and international security. He is also currently conducting research on policies to promote sustainable communities. He continues to assist the State of Qatar in establishing a multimillion-dollar research granting program, and his other work in that geographic region has included technical and policy analyses of water resources. Dr. Cecchine was previously a management systems consultant to several Fortune 500 companies.

Aimee Curtright, Ph.D.
Physical Scientist

Dr. Curtright works in the areas of energy policy and technology assessment. Her recent projects include a sensitivity analysis of alternative transportation fuels under carbon constraints and a review of electric propulsion options for maritime applications. Before joining RAND, she was a postdoctoral research fellow at Carnegie Mellon University in the Department of Engineering and Public Policy. Her past experience also includes research in microbattery fabrication at the U.S. Naval Research Lab and a fellowship at the National Academies with the Board on Energy and Environmental Systems.

Lloyd Dixon, Ph.D.
Senior Economist

Dr. Dixon has expertise in natural resource and environmental policy issues. He is currently leading a large study on the multispecies habitat conservation plan in Riverside County, California. The study is examining the costs of assembling and operating a large wildlife preserve, potential revenue sources, and the economic impact of the reserve on the Riverside County economy. Other work on environmental issues includes analysis of the costs, benefits, and economic impact of several California programs to reduce emissions from passenger vehicles and light-duty trucks. He has also completed a number of studies on the federal Superfund program, evaluating the number and types of parties involved at hazardous waste cleanup sites and the legal and other transaction costs generated by the program's liability-based approach.

Sandy Geschwind, Dr.P.H.
Natural Scientist

Dr. Geschwind is an environmental epidemiologist with more than 25 years of experience in the environmental health field. At RAND, she has studied the impact of endocrine disrupting chemicals on wildlife for the White House Office of Science and Technology Policy and evaluated the effects of pesticide exposures on Gulf War veterans. Other research areas include population studies of exposure to reclaimed water, evaluating national air monitoring and emissions databases for use in health studies, and assisting in setting environmental epidemiology guidance for the World Bank in Russia. Prior to her work at RAND, Dr. Geschwind was in charge of the Cancer Cluster Program at the Connecticut Department of Health Services and spent five years as a hazardous waste field investigator for the U.S. Environmental Protection Agency, Region 9.

David Groves, Ph.D.
Policy Researcher

Dr. Groves is a policy researcher and professor of policy analysis in the Pardee RAND Graduate School, from which he earned his Ph.D. in 2005. He specializes in the development and use of exploratory modeling and robust decisionmaking methods for long-term policy analysis. For the past several years, he has worked to apply these tools to water resource planning in a variety of contexts in California.

Scott Hassell
Engineer

Mr. Hassell's research focuses on the technology, policy, and business aspects of energy and environmental issues, including climate change. Scott previously worked at the Office of Energy Efficiency and Renewable Energy (EERE) at the U.S. Department of Energy (DOE). His responsibilities included budgeting, managing, and implementing EERE's planning, analysis, and evaluation activities by working closely with EERE's leadership and the DOE national laboratories. Scott has also worked on electric power transmission, innovation, housing, transportation, radioactive waste management, Florida Everglades restoration, and protecting first responders. Scott holds an M.B.A. from Yale University; an M.S. in technology and policy and an M.S. in civil and environmental engineering from the Massachusetts Institute of Technology; and a B.S. in engineering from Swarthmore College.

Tom LaTourrette, Ph.D.
Physical Scientist

Dr. LaTourrette's research focuses on energy and natural resources. This research includes evaluating prospects and policy issues for oil shale development; developing a new methodology for assessing natural gas and oil resources in the Rocky Mountain region that incorporates economic and environmental considerations; and conducting studies of mining technology, economics, and policy. His other research interests include natural hazards, emergency response, and science and technology research priorities.

Robert Lempert, Ph.D.
Senior Physical Scientist

Dr. Lempert is an expert in science and technology policy with a special focus on climate change, energy, and the environment. He is a fellow of the American Physical Society; a member of the National Academies' Climate Research Committee; and a member of the Transportation Research Board of the National Academies' Committee on Climate Change and U.S. Transportation. He is leading a study on using scientific and other information for climate change decisionmaking under conditions of uncertainty and has led studies on climate change policy, long-term policy analysis, and science and technology investment strategies for clients such as the White House Office of Science and Technology Policy, the U.S. Department of Energy, the National Science Foundation, and a variety of multinational firms. Dr. Lempert was a member of the Intergovernmental Panel on Climate Change, which won the Nobel Peace Prize in 2007.

Thomas Light, Ph.D.
Associate Economist

Dr. Light's research focuses on transportation, energy, and environmental policy. Prior to arriving at RAND in 2007, he completed his Ph.D. in economics at Cornell University; his dissertation analyzed the efficiency and distributional impacts of adopting various highway pricing and investment policies. Dr. Light is the developer of the Toll Optimization Model—a special tool for calculating economic and traffic impacts for high-occupancy toll (HOT) lanes projects. He has conducted modeling and analysis using the Toll Optimization Model on nearly a dozen road pricing projects in California, Colorado, Minnesota, Oregon, Utah, and Washington.

Melinda Moore, M.D.
Senior Natural Scientist

Dr. Moore is a public health physician who joined RAND in March 2005 after 25 years with the U.S. Department of Health and Human Services (20 years with the Centers for Disease Control and Prevention; 5 years with the Office of Global Health Affairs). Her focus has been on global health policy and practice, with more recent interest in the emerging priority of health and foreign policy. At RAND, she has focused on public health preparedness, global health, and military health, including planning, surveillance and response, and systems analysis. Dr. Moore earned her M.P.H. from the Harvard School of Public Health and her M.D. from Harvard Medical School.

David S. Ortiz, Ph.D.
Engineer

Dr. Ortiz specializes in addressing policy challenges related to large-scale infrastructure systems, transportation, energy, and the environment. With his colleague Henry Willis, Dr. Ortiz has developed new methods for assessing security and efficiency in transportation systems and is leading efforts to develop a cohesive freight transportation policy for North America. Dr. Ortiz led a RAND team that helped the U.S. Army Corps of Engineers formulate plans for restoring the Louisiana coast, which took into account the myriad uncertainties underlying such a plan. These uncertainties included changing storm cycles and rising seas due to climate change, the cost and performance of the hurricane protection systems, and the economic redevelopment of the region. Dr. Ortiz and his colleagues are currently investigating strategic options for the United States regarding unconventional fuels derived from coal and other sources, also taking into account uncertainties in the global market for oil and likely constraints on the emissions of carbon dioxide and other greenhouse gases.

Chris Pernin, Ph.D.
Senior Scientist

Dr. Pernin conducts research on decisionmaking under uncertainty in the areas of science and technology policy and military force development and technology. Recent projects are concerned with science policy decisions, and include issues associated with technology innovation and diffusion, trade-offs between market policies and R&D, and the restructuring of the electric utility industry. His work focuses on adaptive strategies for command and control and intelligence fusion; technology development and adoption as it relates to future military effectiveness; and technology adoption relating to Next Generation Environmental Technologies. Prior to coming to RAND, Chris spent two years in part-time collaboration with Dow and DuPont chemical companies developing instrumentation at the Advanced Photon Source at Argonne National Laboratory.

Richard Silberglitt, Ph.D.
Senior Physical Scientist

Dr. Silberglitt is experienced in performing, evaluating, and managing research in ceramics, magnetic materials, superconductivity, joining of advanced materials, microwave processing of materials, solar energy, and other advanced technology areas. He is currently leading RAND's nanotechnology road-mapping effort for the Intelligence Community's Nano-Enabled Technology Initiative (NETI) and was coauthor of a foresight study for the National Intelligence Council of global trends in bio-, nano-, and materials technologies and their synergies with information technology by 2015, which is currently being updated to 2020. His recent work at RAND also includes a study of the potential impact of high-temperature superconductivity on the reliability of the electric utility grid, and the development of a quantitative decision framework for prioritizing advanced industrial materials research and development (R&D) that has been adapted for R&D portfolio analysis and management for the Office of Naval Research. Prior to joining RAND in 2000, Dr. Silberglitt worked for more than 20 years in the private sector, as well as at the University of California, Santa Barbara; Brookhaven National Laboratory; the Division of Materials Research, the National Science Foundation (founding member); and the National Academy of Sciences. He has published more than 100 journal and proceedings articles and reports, and holds two patents on materials processing.

Paul Sorensen, Ph.D.
Associate Operations Researcher

Dr. Sorensen has expertise in the areas of geographic analysis, operations research, and public finance. His work at RAND focuses on policy research related to transportation, land use, energy, the environment, and emergency response. Dr. Sorensen's recent projects include assessing short-term strategies for reducing congestion in Los Angeles; analyzing the technical, institutional, and political prospects for innovative electronic tolling applications in the United States and abroad; optimizing the locations of fueling stations for the California Hydrogen Highway project; assessing the efficiency, equity, and environmental implications of a recent California transportation finance reform proposal; developing performance measures for large-scale urban transit systems; evaluating the potential of conservation strategies to reduce the volatility of gasoline price fluctuations; designing a framework to evaluate the cost-effectiveness of alternate physical-design security measures at Los Angeles International Airport; and developing optimal location plans for emergency medical clinics to provide vaccinations in the event of a major epidemic or bioterrorism event. In addition, Dr. Sorensen recently authored several resource papers for the National Surface Transportation Policy and Revenue Study Commission, chaired by the U.S. Secretary of Transportation.

Michael Toman, Ph.D.
Senior Economist

For more than 25 years, Dr. Toman has worked as a researcher and research manager in studies of U.S. energy security, policy design for greenhouse gas mitigation, energy utilities regulation, and sustainable economic development. Prior to joining RAND, Dr. Toman worked in the central environment division of the Inter-American Development Bank (IDB), coordinating the Bank's programs on sustainable energy and climate change. Before joining the IDB, Dr. Toman worked for a number of years as a researcher and research manager at Resources for the Future, with involvement in a number of topic areas including energy, climate change, and sustainable economic development. From 1994 to 1996, Dr. Toman served as a senior staff economist for the Council of Economic Advisers, Executive Office of the President, handling energy and environmental issues for the Council. Dr. Toman also is an adjunct faculty member at the Paul H. Nitze School of Advanced International Studies at Johns Hopkins University and at the Bren School of the Environment, University of California, Santa Barbara.

Henry Willis, Ph.D.
Policy Researcher

Dr. Willis's research applies decision analytic tools and risk analysis to help decisionmakers choose among competing resource management strategies or policy options. He has applied this approach to maritime and freight transportation policy, homeland security, emergency preparedness, and management of federal research and development programs. Examples of Dr. Willis's recent research include: assessing risk-based approaches to allocating homeland security preparedness resources and assessing personal protective equipment needs of emergency responders working in a post–structural collapse environment. More recently, Dr. Willis has completed two studies of the security of the U.S. freight transportation infrastructure, assessing the appropriateness of container security efforts and the costs and benefits of proposals to inspect containers entering the United States.

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