List of Contributors

William Anderson is the Associate Chairman and Professor of the Department of Geography and the Center for Transportation Studies at Boston University. His research interests include economic geography, transportation studies, urban geography, energy and environmental studies, urban and regional economic modeling, interregional and international migration, international trade, and quantitative methods. He is also the editor for the *Energy Studies Review* and until 1998, was the editor of the *Canadian Journal of Regional Science*.

John Antle is Professor of Agricultural Economics and Economics at Montana State University. He is the principal investigator for the USAID Soil Management Collaborative Research Support Program. His research interests include soil management, soil mitigation, and greenhouse gases and environmental impacts on agriculture. From 1999–2000, Dr Antle was the president of the American Agricultural Economics Association and was named as a distinguished fellow by the Association in 2002. He was a senior economist on the President’s council of economic advisors from 1989–1990. He has extensively published on topics ranging from soil carbon sequestration, to agroecosystems, to spatial heterogeneity.

Levi Brekke’s current work is focused on reservoir operations modeling, hydrologic studies, decision analysis, and applications for climate information in Reclamation’s short- and long-term planning processes (ranging from seasonal outlooks to multidecadal futures). Dr Brekke is Reclamation’s representative on a joint agency Climate Change Work Team with the California Department of Water Resources. Work efforts are focused on developing climate change risk information for State and Federal infrastructure planners. Dr Brekke’s previous work includes climate change impacts assessment for California’s Central Valley water resources and Lake Cachuma water quality, climate teleconnection applications for California reservoir operations, and various projects in water and wastewater treatment consulting.
Susan Capalbo is Professor and Director of Special Projects for Enhancing Diversity at Montana State University. Her research interests include environmental–economic tradeoff analysis, climate change and carbon sequestration, productivity analysis and production theory, and rural health care and cost–benefit analysis. She teaches courses in environmental economics, natural resources valuation, and production and development economics.

Gary Christopherson is the Director of the Center for Applied Spatial Analysis and an Adjunct Research Social Scientist for the Department of Geography and Regional Development at the University of Arizona. Christopherson is also a PhD candidate in Near East Studies and a Research Assistant in the Advanced Resource Technology Group at the University of Arizona.

Kevin Civerolo has been a research scientist with the New York State Department of Environmental Conservation Division of Air Resources since 1998. Dr Civerolo’s primary task is to provide technical support for the state planning process for ozone, fine particulates and mercury. His professional interests include the evaluation of meteorological and photochemical models; estimating the effects of land use change and large-scale tree planting on air quality; analysis of spatial and temporal trends in air and water pollution data using traditional and non-traditional methods; and back trajectory and source attribution analysis. Dr Civerolo also has experience in the development and use of several techniques for monitoring ambient reactive nitrogen compounds. He currently is an adjunct assistant professor at the University at Albany School of Public Health. His MS and PhD degrees in Meteorology were awarded by the University of Maryland in 1993 and 1996, respectively.

Mike Crimmins is a PhD candidate in the Department of Geography and Regional Development at the University of Arizona. His research interests include land–atmosphere interactions and the impact of landscape changes on local and regional climates, as well as the spatial relationships between terrestrial ecosystems and the atmospheric environment, environmental decision making, and ecologically relevant engineering design.

Kieran Donaghy is Associate Professor of Urban and Regional Planning at the University of Illinois at Urbana-Champaign. The thread connecting Dr Donaghy’s diverse areas of research, teaching and practice is an interest in developing dynamic models that help communities, states and countries understand how complex social and natural systems are interrelated and how different courses of action may alter evolving patterns for better or worse. His applied research focuses on regional impacts of climate change, transportation
planning, state and local development, macroeconomic policy, arms race and military spending issues, and the coordination of international economic policies.

**John Dracup** has been a professor in Civil and Environmental Engineering at Berkeley since June 2000. Prior to that he was a professor in the equivalent department at UCLA. At Berkeley he teaches courses on ‘Design of Environmental and Water Resource Systems,’ Fluid Mechanics, Water Resources Planning and Management, and International Water Systems. The focus of his research program is in hydrology and water resource systems analysis. In the area of hydrology he has been involved in the stochastic analysis of floods and droughts and the assessment of the impact of climate on hydrologic processes. In the area of water resources his research interests are in the simulation and optimization of groundwater systems and large-scale river basin systems. He has been a Principal Investigator for research grants from the United Nations Development Program, the National Science Foundation, the Ford Foundation, the Office of Naval Research, the Environmental Protection Agency, the Office of Water Resources Research, the California Air Resources Board, the Metropolitan Water District of Southern California, the UC Water Resources Center, the UC Pacific Rim Research Center, and the National Institute for Water Resources Research. He was the Senior Fulbright Scholar to Australia in 2000.

**J. Wayland Eheart** is Professor of Environmental Systems in the Department of Civil and Environmental Engineering at the University of Illinois, Urbana-Champaign. Dr Eheart’s research focuses on the evaluation and development of policies, rules and regulations, and, in particular, on the interface of those policies, rules and regulations with engineering decision making. This work involves the use of models of engineered systems coupled with models of natural systems and principles of economic decision making. Dr Eheart teaches courses in environmental systems, uncertainty and risk analysis and water quality modeling.

**Richard Goldberg** is a research staff associate at the Goddard Institute for Space Studies, Columbia University Center for Climate Systems, New York, NY. He received his BS (1979) and MS (1982) in meteorology from the City College of New York.

**Edwin Herricks** is a faculty member in the Department of Civil and Environmental Engineering at the University of Illinois, Urbana-Champaign. He received a BA in Zoology and English from the University of Kansas, an MS in Sanitary/Environmental Engineering from The Johns Hopkins University, and his PhD in Biology from Virginia Polytechnic Institute and
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State University. Dr Herricks has been an advisor to local, state and federal government, and has regularly served as an advisor to the US Environmental Protection Agency. His recent research includes evaluation of the regional effects of climate change, specifically the effect of climate change scenarios on fisheries; the restoration of streams in urban areas, including the development of ecological engineering concepts for watershed management; development of an integrated hydrologic, geomorphic and ecological classification system for watershed management, and the development of a systems approach to minimizing wildlife/aircraft interactions and improving aircraft safety.

**Hugo Hidalgo** is a researcher for the Climate Research Division at Scripps Institution of Oceanography. His research interests are related to hydroclimatology, surface water hydrology, paleoclimate and climate change. His current research is related to the variability and change of hydroclimatological parameters in the Western United States that are indicators of aridity and drought at a variety of temporal scales.

**Christian Hogrefe** is an Adjunct Research Associate at the Atmospheric Sciences Research Center, University at Albany. Dr Hogrefe received a PhD and MS in Atmospheric Sciences from the University at Albany. He currently is working with Dr Kinney to simulate ozone air quality under present and future regional climate scenarios as part of the New York Climate and Health Project. Dr Hogrefe also has extensive experience in the development and application of evaluation techniques to assess the performance of meteorological and photochemical modeling systems, in the use of photochemical models for real-time air quality forecasting, and in the integration of air quality observations and model predictions in the regulatory framework.

**John Keyantash** is an Assistant Professor in the Department of Earth Sciences at California State University, Dominguez Hills. He joined the department in Fall 2002. In addition to teaching upper division science courses for geography and geology majors, as well as general education students, Dr Keyantash performs research on droughts and other trends in the hydrologic cycle. He is involved in the development of classroom science units for the Los Angeles Unified School District. Prior to joining California State University, he was a postdoctoral fellow at UC Berkeley, researching the potential effects of climate change upon chinook salmon populations. He graduated from the University of California, Los Angeles (UCLA) in 2001 with a PhD in Civil Engineering, with an emphasis in Water Resources Engineering. He also holds a master’s degree in Atmospheric Sciences from
UCLA, and obtained his bachelor’s degree in Environmental Science (General Science) at Oregon State University.

Patrick Kinney is an Associate Professor at the Mailman School of Public Health (MSPH) at Columbia University. He has carried out numerous studies examining the human health effects of air pollution, including studies of the effects of ozone and/or particulate matter on lung health and on daily mortality in large cities. His recent research has focused on characterizing levels and determinants of indoor, outdoor and personal exposures to air pollution in the underprivileged neighborhoods of NYC, including studies of indoor allergens, diesel vehicle emissions, volatile organic compounds, PAHs and other air toxins. In 2001, Dr Kinney established a new research program at MSPH to develop and apply integrated models for assessing the human health impacts of climate variability and change. He directs the New York Climate and Health Project, an interdisciplinary team of health, air quality and climate scientists examining changes in health impacts related to heat stress and air pollution in the coming century due to variations in climate and land use in the NYC metropolitan area.

Paul Kirshen is Research Professor in the Civil and Environmental Engineering Department at Tufts University, as well as the Director of Tufts Water, Sustainability, Health and Ecological Diversity (WaterSHED) Center and the Co-founder and Steering Committee Member of The Mystic Watershed Collaborative. His expertise includes water resources planning and management, integrated assessment, climate change, water policy analysis and hydrology. He conducts research in developed and developing countries on climate change impacts and adaptation of integrated water resources and watershed planning; management; and policy.

Kim Knowlton is a post-doctoral research scientist at the Mailman School of Public Health, Columbia University. Her dissertation research was conducted with the NY Climate and Health Project on projecting near-future public health impacts of climate, air quality, land use and demographic changes within the New York region. She holds an MS in Environmental and Occupational Health Sciences from Hunter College, City University of NY, and a BA in Geological Sciences from Cornell University. Her past projects include administration of a national medical screening of nuclear workers; tracking occupational injuries and illnesses among hospital workers (in conjunction with the US Centers for Disease Control and Prevention); evaluation of environmental health and safety concerns for proposed radioactive waste facilities; review of closure plans for Fresh Kills landfill on Staten Island (for the New York City Public Advocate’s Office); and re-
evaluation of chemical exposures from fish consumption (for the Natural Resources Defense Council).

**Jia-Yeong Ku** received professional training from the Department of Atmospheric Science, State University of New York and obtained his PhD in 1984. He joined the Department of Environmental Conservation of New York State as a research scientist in 1985. Dr Ku works on the modeling and understanding of fundamental processes taking place in the formation of ozone and PM episode in the eastern US. His research interests include the development and improvement of the planetary boundary layer process in air quality numerical models and modeling results data analysis.

**Barry Lynn** received a BA from Oberlin College in 1986, a MS from Pennsylvania State University in 1988, and a PhD from Rutgers University in 1994, studying biology, meteorology and environment. His most recent work involves coupling a three-dimensional atmospheric mesoscale model (MM5) with the Goddard Institute for Space Studies climate prediction model (GISS GCM) to simulate future climate variability on a local scale for the New York Climate and Health Project. Dr Lynn’s other projects involve coupling MM5 to spectral microphysics. The new model has led to a significant improvement in the simulation of precipitation processes. Dr Lynn worked under the direction of Dr Rosenzweig to develop fine-scale gridded maps of hourly surface meteorology over NY State from 1988 to 2002 (15 years) using station observations integrated with the MM5.

**Norman Miller** is a Hydrometeorologist at the University of California’s Berkeley National Laboratory and is an Adjunct Professor in the Department of Hydrology and Water Resources at the University of Arizona–Tucson. He leads the Atmosphere and Ocean Sciences Group at Berkeley Lab. His research includes analyzing atmosphere and land surface processes at a range of scales, evaluating climate change impacts, and advancing new computational techniques for climate simulations. He has published over 50 peer reviewed journal papers and book chapters, is a contributing author of the Intergovernmental Panel for Climate Change Second and Third Assessment Reports, the Southwestern US National Assessment, and the California Assessment Reports.

**Barbara Morehouse’s** research emphasizes institutional and policy analysis in the framework of natural resource management and environmental change. She brings a background in critical theory and cultural studies to her research activities, as well as empirical research experience in the Southwest and US–Mexico border region. Currently, Dr Morehouse is carrying out institutional analyses of climate impacts on water management in the Southwest and of
complex society–environment relationships influencing fire management in the region. She also sustains an ongoing interest in the roles played by boundaries and border areas in science–society contexts.

**Charles Oliveri** has worked extensively as a computer programmer for academic and business applications. His expertise is in C++ and related programs. Currently he is a graduate student at SUNY Brockport in the Computer Science Department and lives in Syracuse, NY.

**Brian Orland** is Head of Landscape Architecture at Penn State University. From 1982–2000 he was Professor of Landscape Architecture and Director of the Imaging Systems Laboratory, at the University of Illinois. He has taught design and land resource evaluation with particular emphasis on human–environment interactions and environmental perception. His research interests include the computer modeling of environmental impacts and the design of online information systems to support community-based planning initiatives. Studies have included the impacts of highway development, insect pest impacts and logging on national forests, and military training activities.

**Barron Orr** is Assistant Professor and Geospatial-extension Specialist at the University of Arizona’s college of Agriculture. His research interests include geospatial technology, remote sensing, natural resource management, land tenure, land degradation and diffusion of innovation. His primary objective is to join the missions of the NASA Office of Earth Science and Space Grant with the experience and infrastructure of the Cooperative Extension in order to bridge the gap between geospatial technology and its potential users in the state of Arizona. His extension programming involves a precision approach to natural resource management and agriculture. Dr Orr is also currently serving as the Associate Director for the UA/NASA Space Grant Program.

**Jonathan Overpeck** is Professor in the Geosciences Department at the University of Arizona and Director of the Institute for the Study of Planet Earth, as well as the liaison for acquisition and analysis of climate data and project advisor. His research focuses on global change dynamics, particularly developing the regional to global paleoclimatic and paleoceanographic perspectives needed to reconstruct and understand the full range of climate system variability; recognize and anticipate possible ‘surprise’ behavior in the climate system; understand how the earth system responds to changes in climate forcing; evaluate the realism of environmental models, in particular how they simulate the response to altered forcing; and detect and attribute environmental change to various natural and non-natural forcing mechanisms.
Keith Paustian is a senior research scientist for the Natural Resource Ecology Laboratory and is a professor in the Department of Soil and Crop Science at Colorado State University. Dr Paustian’s main fields of interest include agroecosystem ecology, soil organic matter dynamics and global change. His current research includes studies of the mechanisms controlling soil carbon dynamics in managed ecosystems, regional and national assessments of agricultural practices to mitigate greenhouse gas emissions, and development of decision support tools to advise farmers, land managers and policy makers on greenhouse gas mitigation strategies.

Nigel Quinn is the Leader of the HydroEcological Engineering Advanced Decision Support Group at Berkeley National Laboratory, is an Adjunct Research Professor of Plant Science at Fresno State University and a Research Engineer in the Civil and Environmental Engineering Department at the University of California, Merced. His research interests are at the interface of hydrology, ecology and environmatics – specifically the development of mathematical models and other decision support tools to improve water and environmental management in California and around the world. Dr Quinn has worked on irrigation- and drainage-related water quality problems in the San Joaquin Valley of California for the past 20 years and is the author of over 50 scientific publications related to soil and water management in the United States, England and Africa.

Joyce Rosenthal is an environmental planner and health scientist with over twenty years of experience in research and community-based environmental improvement projects. She is presently Project Manager for the New York Climate and Health Project, providing oversight and coordination of multi-disciplinary research teams working to establish an integrated modeling assessment of the public health impacts of climate and land use variability in the New York metropolitan region. Ms Rosenthal has previously served as Assistant Director of the Mayor’s Council on the Environment of New York City (CENYC), coordinating interagency policy and public outreach on urban environmental issues. She is also Adjunct Professor of Urban Planning at Columbia University’s Graduate School of Architecture, Planning and Preservation. Ms Rosenthal received an MS in Urban Planning (2000) and an MPH in Environmental Health Sciences from the Mailman School of Public Health (2001).

Cynthia Rosenzweig directs research focused on the impacts of environmental change, including increasing carbon dioxide, global warming and the El Niño–Southern Oscillation, on regional, national and global scales. She is the Leader of the Climate Impacts Group at the Goddard Institute for Space Studies, and was the Co-leader of the Metropolitan East Coast Regional
Matthias Ruth is the Roy F. Weston Chair in Natural Economics, Director of the Environmental Policy Program at the School of Public Policy and Co-director of the Engineering and Public Policy Program at the University of Maryland. His research focuses on dynamic modeling of non-renewable and renewable resource use, industrial and infrastructure systems analysis, and environmental economics and policy. His theoretical work heavily draws on concepts from engineering, economics and ecology, while his applied research utilizes methods of non-linear dynamic modeling and adaptive management. He collaborates extensively with scientists and policy makers in the United States, Canada, Europe, Asia and Africa. Professor Ruth teaches nationally and internationally courses and seminars on economic geography, micro-economics and policy analysis, ecological economics, industrial ecology and dynamic modeling at the undergraduate, graduate and PhD levels, and on occasion conducts short courses for decision makers in industry and policy.

Joel Scheraga is National Program Director for the Global Change Research Program and the Mercury Research Program at the US Environmental Protection Agency (EPA). He directs assessments of the potential impacts of global change on air quality, water quality, ecosystems and human health. Dr Scheraga is also the EPA Principal Representative to the US Climate Change Science Program (CCSP), which coordinates and integrates scientific research on climate and global change supported by the US Government. He was a Lead Author of the 1997 Intergovernmental Panel on Climate Change (IPCC) North American Regional Assessment, and an Assisting Lead Author for the 1994 IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations. He holds degrees in geology-mathematics/physics and economics from Brown University.

Chris Small is a geophysicist at the Lamont-Doherty Earth Observatory of Columbia University. His current research interests include the use of satellite remote sensing to quantify changes in the earth’s surface and the causes and consequences of these changes. His contribution to the New York Climate Change Project (NYCHP) is the production of the satellite-derived maps of vegetation fraction and albedo used to categorize urban and suburban land cover properties for the climate and air quality models. Chris received a PhD in Geophysics from the Scripps Institution of Oceanography at the University of California San Diego in 1993.
William Solecki’s research focuses on the urban environmental change and urban land use and suburbanization. Dr Solecki has recently served on the US National Research Council, Special Committee on Problems in the Environment (SCOPE). He has served as the co-leader of several climate impacts and land use studies in the New York metropolitan region, including the Metropolitan East Coast Assessment of Impacts of Potential Climate Variability and Change. He currently is a member of the International Geographical Union (IGU) Megacity Study Group and the International Human Dimensions Programme on Global Environmental Change (IHDP), Urban Environmental Change Study Group, and is on the editorial board of three journals, Professional Geographer, Urban Ecosystems and Social Science Quarterly. He recently served as the Chair of the Human Dimensions of Global Change Specialty Group of the Association of American Geographers. Solecki is a Professor of Geography at Hunter College – City University of New York. Dr Solecki received his PhD in Geography from Rutgers University.

Thomas Swetnam is Director of the Tree Ring Laboratory; Professor of Dendrochronology; Associate Professor of Watershed Management and Adjunct Associate Professor of Geography and Regional Development at the University of Arizona. His research interests include disturbance ecology, forest ecology, dendrochronology, landscape ecology, interactions of climate, people and ecosystems at time scales of seasons to millennia, spatial scales of forest stands to landscapes, and applications of ecosystem and environmental sciences to land management. In 2002, he received the Henry Cowles Award from the Association of American Geographers for biogeography specialty group. He is the Program Chair for the Ecological Society of America and the Associate Editor of the International Journal of Wildland Fire.

Stephen Yool is Associate Professor of Geography and Regional Development, interim department head and an Adjunct Associate Professor of Planning at the University of Arizona. His research interests include biogeography, remote sensing and geographic information systems, with particular applications to the study of fire (pyrogeography), disturbance and disease. He is on the editorial board of Photogrammetric Engineering and Remote Sensing.