

## BIOGRAPHIES

**Dr. Jeffrey R. Brook**, BS, Dip Met, MS, PhD, is a senior research scientist at Environment Canada in Toronto, Ontario, and adjunct professors in the Depts. of Public Health Sciences and Chemical Engineering at the University of Toronto. Dr. Brook is an Associate Editor for the Journal of the Air & Waste Management Association. He serves on the editorial board of a number of other scientific journals and the research management committee for AllerGen, which is a Canadian National Centre of Excellence focusing on genes and the environment. Dr. Brook began his career as an operational meteorologist before undertaking graduate work at The University of Michigan. Dr. Brook conducts original research in acid deposition and urban/regional air quality, emphasizing fine particulate matter, ambient measurement, and exposure assessment in support of a wide range of health-effect study designs. This latter research involves the interface between air pollutant characterization, with source-receptor analysis, and toxicological, clinical and both retrospective and prospective epidemiological studies. Dr. Brook is currently leading Environment Canada's effort in advanced air quality and exposure research related to the Border Air Quality Strategy. This new program has involved the development of one of the world's most advanced mobile air quality laboratories known as CRUISER (the Canadian Regional and Urban Investigation System for Environmental Research), which recently returned from nearly a year of studies in western Canada and is now focusing on southern Ontario and Quebec.

**Dr. Quentin Chiotti** became the Air Programme Director and Senior Scientist at Pollution Probe in June 2002. He has a PhD in Geography from the University of Western Ontario, and has worked extensively in the area of climate change since 1993, including the Adaptation and Impacts Research Group of the Meteorological Service of Canada, Environment Canada (1995-2002). From 1998 - 2002 he was the scientific authority for an Environment Canada led multi-stakeholder study on atmospheric change in the Toronto-Niagara Region. He has published over 40 articles in scholarly journals and books, including co-editing a book on agricultural restructuring and sustainability, and was a contributor to the Canada Country Study, the first national assessment on climate change impacts and adaptation. Currently he is the co-lead author for the Ontario chapter of the 2007 national assessment on climate change impacts and adaptation. Dr. Chiotti has taught at various Universities across Canada (University of Guelph, Carleton University, The University of Lethbridge, and the University of Toronto), and currently represents Pollution Probe on over a dozen environment-related advisory boards and committees, including the Ad Hoc Panel of the Air Management Committee, the Base Metals Environmental Multi-stakeholder Advisory Group (BEMAG), the Clean Air Foundation, the Canadian Climate Impacts and Adaptation Network (Ontario), and the Environment and Food Committee of the Laidlaw Foundation.

**Lorraine Craig** is a Research Associate with NERAM and has been involved in the co-ordination of the air quality risk Management Colloquium series, and preparation of the conference statements since the inception of the series in 2001. Her training is in health studies (B.Sc. - University of Waterloo) and health promotion (M.H. Sc. - University of Toronto). She has worked with NERAM for over 10 years, contributing to various environmental risk management projects for multistakeholder sponsor groups.

**Dr. Bart Croes** is the Chief of the Research Division for the California Air Resources Board, with responsibilities for California's ambient air quality standards; climate change science and mitigation; health, exposure, atmospheric processes, and emissions control research; economic analyses; and indoor air quality. He was the Public Sector Co-Chair for the NARSTO Executive Assembly and former member of the National Research Council Committee on Research Priorities for Airborne Particulate Matter. He has been a peer reviewer for the National Research Council, the U.S. EPA, and numerous journals, and received the Editors' Citation for Excellence in Refereeing from the Journal of Geophysical Research. Mr. Croes has published peer-reviewed articles on air quality simulation modeling, emission inventory evaluation,

reactivity-based VOC controls, acid deposition, the weekend effect for ozone and PM, PM data analysis and trends, and diesel particle traps.

**Dr. Stephanie Gower**, University of Waterloo, has been involved in several NERAM projects as a result of her interests in environmental health and risk assessment, in particular health impacts of air pollutants, and air quality policy. She recently defended her PhD thesis in the department of Health Studies and Gerontology at the University of Waterloo, where her research focussed on development, validation, and use of a publicly available tool called HEIDI for stakeholders to rank airborne emissions from Canadian oil refineries based on estimated health impacts. The research, which grew out of a NERAM project to develop HEIDI (Health Effects Indicators Decision Index), fuelled her interest in the methods used to evaluate health risk associated with exposure to a variety of chemicals. Previous research includes development of the PEARLS (Particulate Exposure from Ambient to Regional Lung by Subgroup) model to evaluate internal lung exposure to airborne particulates for various age and gender population subgroups. Stephanie is currently a Research Associate at the Institute for Population Health at the University of Ottawa, where she is exploring how environmental risk factors affect mortality patterns in populations.

**Dr. Anthony J. Hedley**, University of Hong Kong, was trained in the medical schools of Aberdeen and Edinburgh and formerly worked in endocrinology and internal medicine before moving to the field of public health medicine. He has been an active researcher in chronic disease epidemiology, health services research and tobacco control for nearly 40 years. In 1983 he was appointed to the chair of public health in the University of Glasgow and since 1988 has been Professor of Community Medicine in Hong Kong and honorary consultant to the Hong Kong Department of Health and Hospital Authority. He has worked on environmental health issues in Hong Kong since 1989. He was Chairman of the Hong Kong Council on Smoking and Health from 1997-2002. In 1999 he was awarded a World Health Organisation medal for outstanding contributions to public health.

**Dr. Daniel Krewski** is Professor and Director of the R. Samuel McLaughlin Centre for Population Health Risk Assessment at the University of Ottawa, where he is involved in a number of activities in population health risk assessment within the new Institute of Population Health. Dr. Krewski has also served as Adjunct Research Professor of Statistics in the Department of Mathematics and Statistics at Carleton University since 1984. Prior to joining the Faculty of Medicine at the University of Ottawa in 1998, Dr. Krewski was Director, Risk Management in the Health Protection Branch of Health Canada. While with Health Canada, he also served as Acting Director of the Bureau of Chemical Hazards and as Chief of the Biostatistics Division in the Environmental Health Directorate. Dr. Krewski obtained his Ph.D. in statistics from Carleton University and subsequently completed an M.H.A. at the University of Ottawa. His professional interests include epidemiology, biostatistics, risk assessment, and risk management. Dr. Krewski is a Lifetime National Associate, U.S. National Academy of Sciences (2002); Chair, U.S. National Academy of Sciences Committee on Toxicity Testing and Risk Assessment (2004-2007); Chair, U.S. National Academy of Sciences Committee on Acute Exposure Guidelines for Highly Hazardous Substances (1998-2004); Member, U.S. National Academy of Sciences Board on Radiation Effects Research (2002-present); Member, U.S. National Academy of Sciences Committee on the Biological Effects of Ionizing Radiation (BEIR VII, 2000-present; BEIR VI, 1994-1999); Chair, Royal Society of Canada Expert Panel on the Potential Health Risks of Radiofrequency Fields from Wireless Telecommunications Devices (1998-1999); Member, U.S. National Academy of Sciences Board on Environmental Studies and Toxicology (1996-2002); Member, Scientific Council of the International Agency for Research on Cancer (1992-1996); Fellow, Society for Risk Analysis (1993); Fellow, American Statistical Association (1990).

**Dr. Alan Krupnick** is Director of the Quality of the Environment Division and Senior Fellow at Resources for the Future. He holds a PhD in Economics from the University of Maryland and was a Senior Economist at the President's Council of Economic Advisors during the Clinton Administration. He is an expert on cost-benefit analysis, the valuation of non-market goods and activities, on survey techniques and on policy issues associated with the Clean Air Act. His work on applying contingent valuation techniques to estimate the value of health risk reductions is used in cost-benefit analyses by governments around the world. His most recent effort at valuing improvements in the Adirondacks is already being used by the USEPA and stakeholders to inform policy initiatives to reduce air pollution. Krupnick has served as a consultant to state governments, federal agencies, private corporations, the Canadian government, the European Union, the World Health Organization, the Asian Development Bank and the World Bank. For the international institutions, he has focused on environment and development issues in China, including projects on the development of regional emissions trading programs and on surveys to estimate the willingness to pay for mortality risk reductions. He co-chaired an 80-person advisory committee that counseled the USEPA on new ozone and particulate standards. He is a regular member of expert committees from the National Academy of Sciences and the USEPA and has served on a Royal Society of Canada committee analyzing ambient air quality standard-setting in Canada.

**Dr. Michal Krzyzanowski**, ScD, is responsible for the Air Quality and Health programme of the European Regional Office of World Health Organization. The tasks of the programme include review and synthesis of scientific evidence on health impact of air pollution on health as well as assessment of health burden of air pollution. He lead the WHO project "Systematic review of health aspects of air quality" implemented to support the development of European strategy on air quality (CAFE) in 2001-2004. He also chairs the Joint LRTAP Convention/WHO Task Force on Health Aspects of Air Pollution. Before joining WHO in 1991, Dr. Krzyzanowski conducted epidemiological research on health aspects of air pollution and other environmental factors in Poland, United States and France.

**Dr. Michael D. Moran** is a research scientist with Environment Canada (EC) in Toronto, Ontario. He holds degrees in mathematics, meteorology, and atmospheric science, and he has over 20 years of experience in the development, evaluation, and application of regional meteorological and air-quality models. Much of his work at EC has focused on the modelling of acid deposition, photochemical oxidants, and aerosols for scientific research, for policy development, and for operational forecasting. He has been team leader for the development of two new EC air-quality models: AURAMS (A Unified Regional Air-quality Modelling System), an off-line regional, multi-pollutant, multi-issue air-quality model; and GEM-MACH (Global Environmental Multiscale - Modelling Air quality and Chemistry), a regional/global, multi-pollutant, in-line meteorological/air-quality model. Emissions are an important input to air-quality models, and Dr. Moran also oversaw the development of an emissions processing system named CEPS (Canadian Emissions Processing System). In addition, he is now playing a new role at EC as principal scientist for operational air-quality forecasting.

**Dr. William Pennell** is Management Coordinator of NARSTO -- a public/private partnership among industry, government agencies, and academia in Canada, the United States, and Mexico -- which works to improve the scientific basis of air-quality management in North America. NARSTO performs scientific assessments, conducts workshops and special scientific studies, and it operates the NARSTO Quality Systems Science Center, which provides a central data archive for NARSTO-related field activities. Before becoming NARSTO Management Coordinator, Dr. Pennell was principal line manager for Pacific Northwest National Laboratory's (PNNL) research activities in atmospheric science and global change. The scope of these activities ranged from basic research into the processes responsible for the formation, transport, removal, and environmental impact of energy-related pollutants (and expression of these processes in numerical models) to basic economic and social science research that is focused on obtaining a predictive understanding of the effects of climate and other environmental change on human activities.

**Dr. Jonathan M. Samet**, MD, MS, is Professor and Chairman of the Department of Epidemiology of the Johns Hopkins Bloomberg School of Public Health. Dr. Samet received a Bachelor's degree in Chemistry and Physics from Harvard College, an MD degree from the University of Rochester School of Medicine and Dentistry, and a Master of Science degree in epidemiology from the Harvard School of Public Health. He is trained as a clinician in the specialty of internal medicine and in the subspecialty of pulmonary diseases. From 1978 through 1994, he was a member of the Department of Medicine at the University of New Mexico. At the Johns Hopkins University Bloomberg School of Public Health, he is Director of the Institute for Global Tobacco Control, a WHO Collaborating Center, and Co-Director of the Risk Sciences and Public Policy Institute. His research has addressed the effects of inhaled pollutants in the general environment and in the workplace. He has written widely on the health effects of active and passive smoking and served as Consulting Editor and Senior Editor for Reports of the Surgeon General on Smoking and Health and the National Cancer Institute's Monographs on Tobacco Control. He testified against the tobacco industry in litigation brought by the State of Minnesota and the U.S. Department of Justice. He has edited books on the epidemiology of lung cancer and on indoor and outdoor air pollution. He has served on the Science Advisory Board for the U.S. Environmental Protection Agency and was Chairman of the Biological Effects of Ionizing Radiation Committee VI and the Committee on Research Priorities for Airborne Particulate Matter of the National Research Council. He presently chairs the Board on Environmental Studies and Toxicology of the National Research Council. For the Institute of Medicine, he was Chair of the Committee on Asbestos: Selected Health Effects, and is presently Chair of the Committee on Evaluation of the Presumptive Disability Decision-Making Process for Veterans. He was elected to the Institute of Medicine of the National Academy of Sciences in 1997. He received the Surgeon General's Medallion in 1990 and 2006 for his work on the Surgeon General's Reports and the Prince Mahidol Award, from the King of Thailand, in 2005 for his work on air pollution.

**Dr. John Shortreed** is Professor Emeritus of Civil Engineering, University of Waterloo; Director, Institute for Risk Research and Network for Environmental Risk Assessment and Management, University of Waterloo. Twenty-five years experience in risk analysis in a variety of areas including: ISO Risk Terminology (Guide 73), Krever committee on the safety of the blood system, International conference on Air Pollution and Health, total quality for drinking water systems, Canadian Standards Association risk management committee (Q850), member of Canadian advisory committee on Xenotransplantation, risk assessment of emissions from Canadian refineries, application of Life Quality Index in Kuwait, and risk analysis of dangerous goods transport. Interested in cost effective and innovative applications of risk management, especially in non safety applications where risk includes opportunities.

**Dr. Martin Williams** is currently Head of the Air and Environment Quality Division of the Department for Environment, Food and Rural Affairs in the UK. He graduated in Chemistry from the University of Wales, Cardiff, and took a PhD in Chemistry at the University of Bristol. After postdoctoral research at UBC in Vancouver, Canada, he joined the air pollution division of the Government's Warren Spring Laboratory, becoming its Head in 1982. After a period as technical assistant to the Chief Scientist of the Department of Trade and Industry, he joined the then Department of the Environment to head the Science Unit on Air Quality, becoming Head of the Division in 2002, where he has responsibility for policy on air quality and industrial air pollution control. He is currently chairman of the Executive Body of the UNECE Convention on Long Range Transboundary Air Pollution and holds a Visiting Professorship in air pollution and health at King's College, London.

**Dr. André Zuber** has a PhD in Atmospheric Physics/Meteorology from Stockholm University 1989. Scientific Officer/Technical officer at the Swedish Environmental Protection Agency 1990 to 2002. Dealing with air pollution, climate change and ozone layer. Since 2002 national expert affiliated to the European Commission for the development of the Clean Air for Europe program, which will be the basis for the European Community thematic strategy for air pollution according to the sixth environmental action program. Is the coordinator for the CAFE contacts with the WHO projects and AIRNET and other research projects of the Community.