

**Curriculum Vitae
Winston Harrington**

Office address:

Resources for the Future
1616 P Street NW
Washington, DC 20036

Voice: 202 328-5112
Fax: 202 939-3460
Electronic mail: harrington@rff.org

Education:

A.B., Mathematics, University of North Carolina, Chapel Hill, North Carolina, 1968
M.A., Mathematics, Cornell University, Ithaca, New York, 1970
Ph.D., City and Regional Planning, University of North Carolina, Chapel Hill, North Carolina, 1985

Recent Professional Experience:

1990-present	Senior Fellow, Resources for the Future, Washington D.C., Quality of the Environment Division
2005	Consultant, Department of Environment, Food and Rural Affairs, UK
2004	Consultant, Environomics, Inc.
2004-2007	Member, National Research Council Committee on the Use of Models in the Regulatory Process.
2003-present	Consultant, Organization of Economic Cooperation and Development
2001	Consultant, Industrial Economics, Inc.
1998-present	Consultant, Drinking Water Committee, Science Advisory Board, USEPA
1995-1998	Consultant, The World Bank
1993-1999	Consultant, Harvard Institute of International Development
1991-present	Adjunct Professor, Georgetown Public Policy Institute, Georgetown University
1990-1991	Visiting Professor, Departments of Economics and Environmental Studies, University of California, Santa Barbara

Publications

Reforming Regulatory Impact Analysis, Washington, RFF Press, 2009) (editor, with Lisa Heinzerling and Richard D. Morgenstern).

Chapters written or co-written:

1. "Introduction"
8. "The Cooling Water Intake Rule,"
11. "Concluding Observations and Recommendations"

"A Simulation of the Effects of Transportation Demand Management Policies on Motor Vehicle Emissions." In *Transportation, Land Use, Planning, and Air Quality: Proceedings of the 2007 Conference*. (Srinivas S. Pulugurtha, Robert O'Laughlin and Shauna Hallmark, eds. 2008) With Sebastien Houde and Elena Safirova.

Controlling Automobile Air Pollution. (Burlington, VT. Ashgate Publishing Co. 2007) (editor, with Virginia D. McConnell).

"Transit in Washington, DC: Current Benefits and Optimal Level of Provision." *Journal of Urban Economics* 62(2) (2007). With Peter Nelson, Andrew Baglino, Elena Safirova and Abram Lipman.

"Do Market Failures Justify Tightening Corporate Average Fuel Economy (CAFE) Standards?" *Energy Journal* 28(4) (2007). With Ian Parry and Carolyn Fischer.

"Automobile Externalities and Policies" *Journal of Economic Literature* 45, 374-400 (2007). With Ian Parry and Margaret Walls

"Economies of Scale and Technical Efficiency in Community Water Systems." *Journal of the American Water Works Association*, 98(9) (2006). With Jhih-Shyang Shih, Billy Pizer and Kenneth Gillingham.

"Modeling Economywide versus Sectoral Climate Policies Using Combined Aggregate-Sectoral Models." *Energy Journal*, 27(3) 2006, 135-168. With William Pizer, Dallas Burtraw, Richard Newell, and James Sanchirico.

"Choosing Congestion Pricing Policy: Cordon Tolls Versus Link-Based Tolls," *Transportation Research Record*, 1932 (2005). With Elena Safirova, Peter Nelson, Abram Lipman and Drew Baglino.

"International Experience with Competing Approaches to Environmental Policy: Results from Six Paired Cases." *Moving to Markets in Environmental Protection*. Charles Kolstad and Jody Freeman, eds., Oxford University Press, 2007). With Richard D. Morgenstern.

“Pay as You Drive for Car Insurance” in *New Approaches on Energy and the Environment: Policy Advice for the President* (Richard Morgenstern and Paul Portney, eds. RFF Press, 2004). With Ian Parry.

“State Innovation for Environmental Improvement” in *New Approaches on Energy and the Environment: Policy Advice for the President*. (Richard Morgenstern and Paul Portney, eds. RFF Press, 2004). With Karen Palmer and Margaret Walls.

Choosing Environmental Policy: Comparing Instruments and Outcomes in the United States and Europe. (Washington, D.C. RFF Press, 2004). (editor, with Richard D. Morgenstern and Thomas Sterner)

“Public Treatment of Private Waste: Industrial Use of Municipal Wastewater Treatment” Report prepared for the Mellon Foundation, September 2004.

“The Economics of Fuel Economy Standards.” *Journal of Economic Perspectives* v.17 no. 4, 2003, pp.203-216. (with Paul Portney, Ian Parry and Howard Gruenspecht)

“A Lighter Tread? Policy and Technology Options for Motor Vehicles.” *Environment* v. 45 Iss. 9 (November 2003), p. 22 (with Virginia D. McConnell).

“Motor Vehicles and the Environment,” In Tom Tietenberg and Henk Folmer, eds., *International Yearbook of Environmental and Resource Economics*, vol 7. (London: Edward Elgar, 2003) (with Virginia D. McConnell).

"Distributional Consequences of Road Pricing Policies In Metropolitan Washington DC. In *Road Pricing: Theory and Practice*, Georgina Santos, ed. Elsevier, 2003. (with Elena Safirova, Ian Parry, Peter Nelson, David Mason and Kenny Gillingham).

“U.S. Drinking Water Challenges In The 21st Century,” *Environmental Health Perspectives, Environmental Health Perspectives* v. 110 Supp. 1, February 2002 (with Ronnie Levin, Paul Epstein, Tim Ford, Erik Olson, Eric Reichard).

“The Theory of Penalties: ‘Leverage’ and ‘Dealing’, in Anthony Heyes, ed., *The Law and Economics of the Environment*. Edward Elgar (Cheltenham, 2001) (with Anthony Heyes).

"Public Support for Pollution Fee Policies for Motor Vehicles: Survey Results", *Regional Science and Urban Economics*, v. 31 no. 4, pp. 505-522, July 2001 (with Anna Alberini and Alan Krupnick).

“Overcoming Public Aversion to Congestion Pricing,” *Transportation Research Part A*, v. 35 pp. 87-105, 2001 (with Alan J. Krupnick and Anna Alberini).

"Costs, Emissions Reductions and Vehicle Repair: Evidence from Arizona," *Journal of Air and Waste Management* v. 50 pp. 509-521, April 2000 (with Amy Ando and Virginia McConnell).

"The Use Of Economic Incentives In Developing Countries: Lessons From International Experience With Industrial Air Pollution," *Journal of Environment and Development* v. 9 no. 1, March 2000 (with Allen Blackman). Reprinted in Gloria E Helfand and Peter Berck (eds.) *The Theory and Practice of Command and Control in Environmental Policy*. (Ashgate Publishing Limited, International Library of Environmental Economics and Policy. 2003).

"Are Vehicle Emission Inspection Programs Living Up to Expectations?" *Transportation Research Part D*, v. 5, no. 3, May 2000 (with Amy Ando and Virginia D. McConnell).

"Coase and Car Repair: Who Should Be Responsible for Emissions of Vehicles in Use?" in Michael Kaplowitz and Michael Lawrence, *Property Rights, Economics and the Environment*. JAI Press (Stamford CT: 2000). (with Virginia D. McConnell).

"On the Accuracy of Regulatory Cost Estimates," *Journal of Policy Analysis and Management* v. 19 no. 2, Spring 2000 (with Richard D. Morgenstern and Peter Nelson). Awarded the Vernon Prize for the best article published in JPAM in 2000.

"Predicting the Costs of Environmental Regulations," *Environment* v. 41 No. 7, September 1999 (with Richard D. Morgenstern and Peter Nelson).

"Estimating Full IM240 Emissions from Partial Test Results: Evidence from Arizona." *Journal of Air and Waste Management*, v. 49 pp. 1153-1167 (1999). (with Amy Ando and Virginia McConnell)

"Economic Incentive Policies under Uncertainty: The Case of Vehicle Emission Fees." In Ken Small and Roberto Roson, eds. *Environment and Transport in Economic Modelling*. Amsterdam: Kluwer Academic Publishing, 1998 (with Virginia D. McConnell and Anna Alberini).

"Whose in the Driver's Seat?" Mobile Source Emission Policy in the U.S. Federal System" in John Braden and Stef Proost, eds., *Economic Aspects of Environmental Policy Making in a Federal State* London: Edward Elgar Publishing, 1998. (with Virginia D. McConnell and Margaret Walls).

"Fuel Economy and Motor Vehicle Emissions," *Journal of Environmental Economics and Management*, v. 33 No. 3 (July 1997).

"Estimating an Emissions Supply Function from Accelerated Vehicle Retirement Programs," *The Review of Economics and Statistics* v. 78 No. 2 pp. 251-265 (1996) (with Anna Alberini and Virginia D. McConnell).

"The Impact of Environmental Liability on Industrial Real Estate Development," *Journal of Real Estate and Finance Economics* v. 12 pp. 37-58 (1996) (with James Boyd and Molly K. Macauley).

"What is the Value of Reduced Morbidity in Taiwan?," in *The Economics of Pollution Control in Asian Pacific*, edited by Robert Mendelsohn and Daigee Shaw, Edward Elgar Publishing Ltd. Aldershot, England 1996 (with Anna Alberini, Maureen Cropper, Tsu-Tan Fu, Alan J. Krupnick, Jin-Tan Liu, and Daigee Shaw).

"Shifting Gears: New Directions for Cars and Clean Air," *Energia*, v. 16 no. 4 (1995) (with Margaret A. Walls and Virginia D. McConnell). In Italian.

"Economics and Health-Based Environmental Standards," *Policy Studies Journal* v. 23 No. 1, Spring 1995. (with Paul R. Portney).

"Using Economic Incentives to Reduce Auto Pollution," *Issues in Science and Technology* Volume 11 no. 2, Winter 1995 (with Margaret Walls and Virginia McConnell). Reprinted in *ChemTech*, May 1995.

"Optimal Adders for Environmental Damage by Public Utilities", *Journal of Environmental Economics and Management*, vol. 29, pp. S-1--19, July 1995 (with Dallas Burtraw, A. Myrick Freeman III, and Alan J. Krupnick).

"Determinants of Participation in Accelerated Vehicle Retirement Programs," *Rand Journal of Economics* v. 26 no. 1, Spring 1995. (with Anna Alberini and Virginia D. McConnell).

"Modeling In-Use Vehicle Emissions and the Effects of Inspection and Maintenance Programs," *Journal of Air and Waste Management*, v. 44 (June 1994) (with Virginia McConnell).

"The Social Costing Debate: Issues and Resolutions" (with Dallas Burtraw, A. Myrick Freeman III, and Alan J. Krupnick), in *Social Costs of Energy*, O. Hohmeyer and R. Ottinger, eds., Springer-Verlag, 1994.

"Cost-Effectiveness of Remote Sensing of Vehicle Emissions," in Richard Kosobud, ed. *Cost-Effective Approaches to Control of Urban Smog* (Chicago: Federal Reserve Bank of Chicago, 1993). (with Virginia McConnell).

"Air Pollution and Respiratory Morbidity Among Adults in Southern California", *Journal of Epidemiology*, v. 137 no. 7 (April 1993). (with Bart D. Ostro, Michael J. Lipsett, Jennifer K. Mann and Alan J. Krupnick).

"Weighing Environmental Externalities: How to Do It Right," *The Electricity Journal* v. 5 no. 7, Aug./Sept. 1992. (with A. Myrick Freeman III, Dallas Burtraw and Alan J. Krupnick).

"The Economic Losses of a Waterborne Disease Outbreak," *Journal of Urban Economics* v. 25 pp. 116-137 (1989). Reprinted in *The Economics of the Environment*, Wallace E. Oates, ed., Edward Elgar Publishing Co., Aldershot, England (1992). (with Alan J. Krupnick and Walter O. Spofford, Jr.).

"A Reconsideration of Enforcement Leverage when Penalties are Restricted." *Journal of Public Economics* v. 45, August 1991 (with Jon Harford).

The Economics of a Waterborne Disease Outbreak: A Case Study of Giardiasis in Luzerne County, Pennsylvania (Washington, D.C.: Resources for the Future, 1991) (with Walter O. Spofford, Jr. and Alan J. Krupnick).

"Wildlife: Severe Decline and Partial Recovery," in Kenneth D. Frederick and Roger A. Sedjo, eds., *America's Renewable Resources: Historical Trends and Current Challenges* (Washington, D.C. Resources for the Future, 1991).

"The Growing Role of Outdoor Recreation," in Kenneth D. Frederick and Roger A. Sedjo, eds., *America's Renewable Resources: Historical Trends and Current Challenges* (Washington, D.C. Resources for the Future, 1991) (with Marion Clawson).

"Carrots, Sticks and Urban Problems," *Across the Board*, October 1990.

"Reapportionment Reconsidered," *Journal of Policy Analysis and Management* (October 1990) (with Deanna Marquart).

"Economic Uncertainty and the Cost of Environmental Policy," *Contemporary Policy Issues* (July 1990) (with Hadi Dowlatabadi).

"Measuring Welfare Values of Productivity Changes," *Southern Economic Journal* v. 56 no. 4 (April 1990) (with A. Myrick Freeman III).

"Ambient Ozone and Acute Health Effects: Evidence from Daily Data," *Journal of Environmental Economics and Management* v. 18 pp.1-18 (1990) (with Alan J. Krupnick and Bart Ostro).

"The Benefits of Curbing Acid Rain" in *Environmental Costs of Electricity*, Richard Ottinger, ed., (New York: Oceana Publications, 1990) (with Alan J. Krupnick and Sari Radin).

"Acid Rain: Science and Policy," RFF Primer, Washington D.C., Resources for the Future (1989). Translated and Reprinted as "Piogge acide: scienza e politica," *Energia* v. XI n. 1 March 1990.

"Enforcement Leverage When Penalties Are Restricted," *Journal of Public Economics* v. 37 no. 1 pp. 29-53 (1989). Reprinted in *The Economics of the Environment*, Wallace E. Oates, ed., Edward Elgar Publishing Co., Aldershot, England (1992).

"Policies for the Mitigation of Acid Rain: A Critique of Evaluation Techniques," *Energy Policy* v. 17 no. 2 pp. 116-122 (April 1989) (with Hadi Dowlatabadi).

"The Measurement of Recreation Scarcity," *Trends* v. 26 no. 2 (1989).

"Efficient vs. Open Access Use of Public Facilities in the Long Run," *Journal of Environmental Economics and Management* v. 15 pp. 462-469 (1988).

"Valuing the Benefits of Health and Safety Regulations," *Journal of Urban Economics* v. 22 pp. 101-112 (1987) (With Paul Portney).

Measuring Recreation Supply (Washington, Resources for the Future, 1987).

Rules in the Making: A Statistical Analysis of Regulatory Behavior (Washington, Resources for the Future, 1986) (with Wesley A. Magat and Alan J. Krupnick).

Enforcing Pollution Control Laws (Washington, Resources for the Future, 1986) (With Clifford S. Russell and William J. Vaughan).

"Short-Term Nitrogen Dioxide Exposure and Acute Respiratory Disease in Children," *Journal of the Air Pollution Control Association* (October 1985) (With Alan J. Krupnick).

"Assessment of Nonpoint Source Pollution Control Policies," *Journal of Soil and Water Conservation* vol. 4, no. 1, January-February 1985. (With Alan J. Krupnick and Henry Peskin).

"Revealed Rules for Regulatory Decisions: An Empirical Analysis of EPA Rulemaking Behavior," *International Comparisons in Implementing Laws*. Paul Downing and Kenneth Hanf, eds. Kluwer-Nijhoff, 1983. (With Wesley Magat and Alan J. Krupnick).

"Endangered Species," in P.R. Portney, ed. *Current Issues in Natural Resource Policy*, (Baltimore, Johns Hopkins University Press for Resources for the Future, 1982). (With Anthony C. Fisher).

"Understanding Regulatory Decision Making: An Econometric Approach," *Policy Studies Journal* vol. 11, no. 1, 1982. (With Alan J. Krupnick and Wesley A. Magat).

The Regulatory Approach to Air Quality Management: A Case Study of New Mexico (Washington, D.C., Resources for the Future, 1981).

"Stationary Source Pollution Policy and Prospects for Reform," in *Environmental Regulation and the U.S. Economy*. Henry Peskin, Paul R. Portney, and Allen V. Kneese, eds. (Baltimore: Johns Hopkins University Press for Resources for the Future, 1981). (With Alan J. Krupnick).

"Stationary Source Air Pollution Regulation in the Four Corners States," *Southwestern Review of Management and Economics* vol. 1, no. 2, 1981 (With David Abbey).

"The Endangered Species Act and the Search for Balance," *Natural Resources Journal*, January 1981.

Recent Reports and Working Papers

"The Design of Effective Regulations in Transport," OECD, Joint Transport Research Centre, Discussion Paper 2008-3, presented at the OECD Round Table on the Cost and Effectiveness of Policies to Reduce Vehicle Emissions, Jan. 31- Feb. 1, 2008.

“Modeling Infill Development” March 2007 (with Elena Safirova and Sebastien Houde).

“Spatial Development and Energy Consumption” March 2007 ((with Elena Safirova and Sebastien Houde).

“Grading Estimates of the Benefits and Costs of Federal Regulation: A Review of Reviews.” Working Paper, August 2006.

“Comparing The Ex Ante And Ex Post Costs Of Complying With Regulatory Changes: Final Report.” Prepared for Department of Environment, Forestry and Rural Affairs (UK), Marcy 2006. With Michael MacLeod, Dominic Moran, Manuel Lago Aresti, and Richard Morgenstern.

“RIA Assessment Methods.” Report prepared for the Organization of Economic Cooperation and Development, June 2004.

“Economic Impacts of Tightening the Corporate Average Fuel Economy (CAFE) Standards.” Report prepared for the Environmental Protection Agency and the National Highway Traffic Safety Administration. (with Carolyn Fischer and Ian Parry)

“Evaluating Regulatory Impact Analyses.” Report prepared for the Organization of Economic Cooperation and Development, September 2003 (with Richard D. Morgenstern).

Exhausting Options: Assessing SIP-Conformity Interactions. RFF Report, January 2003 (with Arnold Howitt, Alan Krupnick, Jonathan Makler, Peter Nelson, and Sarah Siwek).

“Effects of Climate Change Policies on the U.S. Household Transportation Sector” RFF Discussion Paper 03-03 (with James Sanchirico and Margaret Walls).