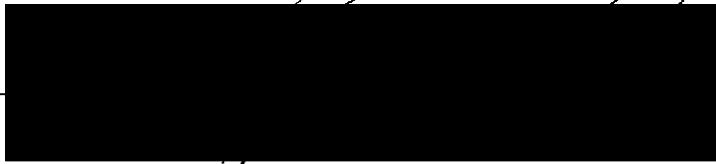


Committee on Energy and Commerce
U.S. House of Representatives
Witness Disclosure Requirement - "Truth in Testimony"
Required by House Rule XI, Clause 2(g)(5)

1. Your Name: Alan Krupnick		
2. Your Title: Senior Fellow		
3. The Entity(ies) You are Representing: Myself, but I work for Resources for the Future		
4. Are you testifying on behalf of the Federal, or a State or local government entity?	Yes	No X
5. Please list any Federal grants or contracts, or contracts or payments originating with a foreign government, that you or the entity(ies) you represent have received on or after January 1, 2015. Only grants, contracts, or payments related to the subject matter of the hearing must be listed. The Department of Energy has supported, in part, our work on North American Energy Policy Harmonization, primarily three workshops and associated written reports, plus embryonic support for a North American electricity and natural gas model.		
6. Please attach your curriculum vitae to your completed disclosure form.		

Signature: _____



Date: _____

12/12/17

Alan Krupnick
Resources for the Future

Professional Preparation

University of Maryland, Economics	Ph.D., 1980
Dissertation: <i>The Optimal Control of Pollution with Endogenous Labor Supply</i>	
University of Maryland, Economics	M.A., 1974
Columbia University, Graduate School of Business, International Business	1969 – 1970
Pennsylvania State University, Finance (with Distinction)	B.S., 1969

Areas of Specialization

Natural Resource and Environmental Economics

Professional Experience

Co-Director, Center for Energy and Climate Economics	2015-2017	
Director, Center for Energy Economics and Policy, Resources for the Future		2010 – 2014
Senior Fellow, Resources for the Future		1990 – present
Fellow, Resources for the Future		1980-1990
Senior Economist, Council of Economic Advisers (on leave from RFF)		1993-1994
Consultant, OECD; U.S. EPA; Department of Environment, Food and Rural Affairs, State of Texas		2007
Consultant, World Bank		2006
Consultant, World Bank, U.S. EPA		2005
Consultant, United Nations Compensation Committee, U.S. EPA, European Union		2004
Consultant, U.S. EPA, Inter-American Development Bank, Environment Canada, Charles River Associates, OECD		2003
Consultant, U.S. EPA, Health Canada		2001
Consultant, European Community, Environment Directorate		2000
Consultant, World Bank		1999
Consultant, World Bank, Europe and Central Asia Division; PacifiCorp, Great Lakes Commission; Canadian Energy Research Institute		1998
Consultant, World Health Organization; World Bank, Industry and Energy Division and Europe and Central Asia Division; Environment Canada; Industry Canada		1997
Consultant, USAID; Harvard Institute for International Development; World Bank, Latin American Division; Environment Canada; Health Canada, Industry Canada		1996
Consultant, Ontario Hydro; World Bank, Latin American Division; American Petroleum Institute, Southern Appalachian Management Initiative		1995
Consultant, World Bank, Asia Division; Office of Technology Assessment		1993
Consultant, World Bank Latin America Region, Public Economics Division (Country Department), World Development Report		1990-1992
Consultant, World Bank, Environment Department, Asia Region, Infrastructure and Urban Development Department; NERA; U.S. Department of Energy; Geomet, Inc.		1989-1990

Consultant, Office of Technology Assessment, U.S. Congress	1987-1988
Consultant, Consultant, Viking Systems, Inc.; Exeter Assoc.	1987-1988
Consultant, University of Missouri; State of Maryland	1980-1982
Faculty Research Associate, Bureau of Business & Economic Research, University of Maryland	1977-1980
Instructor, University of Maryland	1976-1977
Consultant, National Commission on Water Quality	1976
Autonomous Teaching Assistant, University of Maryland	1974-1976
Research Assistant, Bureau of Business & Economic Research, University of Maryland	1972-1974
Research Assistant, The Federal Reserve Bank of Philadelphia	1970-1972

Professional Activities

Memberships and Appointments: UE EPA Science Advisory Board Expert Elicitation subcommittee (2009); National Academy of Sciences, National Research Council Committee on the External Costs of Energy (2008-2009); National Academy of Sciences, National Research Council Committee on the Mortality Benefits of Reducing Ambient Ozone Concentrations, (2007-2008); U.S. EPA Expert Panel on Environmental Models (2004-2005); National Academy of Sciences, National Research Council Committee on Transportation Policy and the Environment (2003-2004); Co-Chair, Interagency Steering Committee on Valuing Health Outcomes (2002-2003); Invited to serve on the Advisory Committee to the Center for Environmental and Resource Policy, North Carolina State University (2002); CMAQ NAS Committee (1999-2002); STPP NAS Committee (1999-2002); Expert Panel on Reviewing the Canadian Proposed Ozone and PM Standards, Royal Society of Canada (1999-2001); Co-Chair of the Workshop on the Convergence of Risk Assessment and Socioeconomic Analysis to Better Inform Chemical Risk Management Decisions, sponsored by U.S. EPA, OECD, and Health Canada, Arlington, VA (May 1-2, 2000); Subcommittee of the EPA Science Advisory Board for Review of the 812 Cost-Benefit Study, U.S. EPA (1998-1999); Co-chair of the Subcommittee for Development of Ozone, Particulate Matter and Regional Haze Implementation Programs, Clean Air Act Advisory Committee to U.S. EPA. (1995-7); National Research Council's Review Team for the Federal Highway Cost Allocation Study (1995-1997); National Research Council's Committee on Research and Peer Review at the Environmental Protection Agency (1994-1997); Scientific Advisory Board, Maryland Power Plant Research Program, State of Maryland (1986-1990); U.S. Department of Energy Environmental Costing Task Force (1994-1995); New York State Managing Board for the Environmental Costing Study (1995-1996).

Testimony: Performance of the Clean Air Act, before the House Subcommittee on Energy and Air Quality, Committee on Energy and Commerce (May 1, 2002); Proposed NAAQS for Ozone and PM (Panel I), before the Subcommittee on Clean Air, Wetlands, Private Property, and Nuclear Safety, Senate Committee on Environment and Public Works (April 24, 1997); Implementation of the Proposed NAAQS for Ozone and PM (Panel II), before the Subcommittee on Clean Air, Wetlands, Private Property, and Nuclear Safety, Senate Committee on Environment and Public Works (April 24, 1997); Implementation and Enforcement of the Clean Air Act, before the Subcommittee on Health and the Environment and the Subcommittee on Oversight, House Commerce Committee (November 9, 1995); Regulatory Reform

bills in Congress, provided to the U.S. Senate Governmental Affairs Committee (March 8, 1995).
Testimony, Senate Governmental Affairs Committee, House Marine Fisheries Committee, House
Committee on Science, Space, and Technology.

Reviewer: *American Economic Review, Review of Economics and Statistics, American Journal of
Agricultural Economics, Journal of Environmental Economics and Management, Journal of Applied Policy
and Management, Land Economics, Journal of Risk and Uncertainty, Environment and Resource
Economics, Contemporary Policy Issues, Marine Resource Economics, Environmental Science and
Technology, Operations Research, Journal of the Air Pollution Control Association, Journal of Industrial
Economics, Journal of Regional Studies, Oxford University Press, Journal of Forestry, National Science
Foundation*

Awards and Recognitions

- Elected President, Association of Environmental and Resource Economists (AERE), Term: 2013-14.
- Elected as an AERE Fellow by the Association of Environmental and Resource Economists (AERE) (2011)
- Appointed to the Site Selection Committee for the 2010 World Congress of Environmental and Resource Economists.
- Award from the NAS Board of Environmental Studies and Toxicology for Outstanding Service on the Committee on Estimating Mortality Risk Reduction Benefits from Decreasing Tropospheric Ozone Exposure (2009)
- Elected member of the Board of the Association of Environmental and Resource Economists (AERE). 2005-07.
- Appointed to Editorial Board, *Land Economics*, 2001-4
- Award for Exceptional Leadership and Subcommittee Co-Chair and Outstanding Contributions as a member of the FACA Subcommittee for Ozone, PM and Regional Haze Implementation Programs, Presented by U.S. EPA, September 1995-December 1997.
- Winner of an Oak Ridge National Laboratory Significant R&D Accomplishment Award for the U.S. DOE-EU Fuel Cycle Externalities Study, 1993-1994.

Publications

Krupnick, Alan J., Amin Asadollahi, Juan Carlos Belausteguigoitia Rius, Kristin Hayes, Isabel Echarte, Philip Gass, and Daniella Echeverria. 2017. "North American Energy Integration: Assessing Oil and Gas Policy Issues ahead of NAFTA Renegotiation." RFF Report.
http://www.rff.org/files/document/file/RFF-Rpt-NA%20Oil%20and%20Gas_NAFTA.pdf.

Krupnick, Alan and Shawhan, Daniel L. and Hayes, Kristin, Harmonizing the Electricity Sectors Across North America: Recommendations and Action Items from Two RFF/US Department of

Energy Workshops (February 12, 2016). Resources for the Future Discussion Paper 16-07.
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SSRN: <https://ssrn.com/abstract=2738764> or <http://dx.doi.org/10.2139/ssrn.2738764J>.

Krupnick, A., D. Shawhan and K. Hayes, “Harmonizing North American Electricity Policy and Planning: An Action Agenda,” *Resources* Issue 192 (Spring/Summer 2016).
Bistline, D. Shawhan, G. Blanford, F. de la Chesnaye, B. Mao, N. Santen, R. Zimmerman, A. Krupnick, *Systems Analysis in Electric Power Sector Modeling: Evaluating Model Complexity for Long-Range Planning*. Electric Power Research Institute and Resources for the Future, October 2017. <http://www.rff.org/research/publications/systems-analysis-electric-power-sector-modeling-evaluating-model-complexity>.

“Policy Analysis: Valuation of Ecosystem Services in the Southern Appalachian,” with H. Spencer Banzhaf, Dallas Burtraw, Susie Chung Criscimagna, Bernard Cosby, David Evans and Juha Sikkamaki, *Environmental Science and Technology* (forthcoming)

“Flexibility and Stringency in Greenhouse Gas Regulations,” (with Dallas Burtraw and Matt Woerman), *Environmental and Resources Economics*. (forthcoming).

Tang, Xiaoqin, Jen Irving, Stephen Sellers, Joshua Crisp, Lucija Muehlenbachs, Alan Krupnick, Daniel Horwitz, David Carey, "Increased Traffic Accident Rates Associated with Shale Gas Drilling in Pennsylvania," *Accident Analysis & Prevention*.

A Retrospective Review of Shale Gas Development in the United States: What Led to the Boom?” (with Zhongmin Wang) *Economics of Energy and Environmental Policy* (Executive Summary).

Lessons from the U.S. Shale Gas Boom (with Zhongmin Wang), *International Monetary Fund* book (forthcoming)

Economics of The Unconventional Energy Revolution (draft or forthcoming), book chapter. Debra Kaden and Tracie Rose, eds., *Environmental and Health Issues of Unconventional Gas and Oil Development*, Elsevier.

“Water Quality and Quantity Impacts of Hydraulic Fracturing” (with Y. Kuwayama and S. Olmstead), *Current Sustainable/Renewable Energy Reports*, Vol. 2 (1) Springer.

“Hydraulic Fracturing on Federal and Indian Lands: An Analysis of the Bureau of Land Management’s Revised Proposed Rule.” (with Nathan Richardson and Molly Feiden) *Journal of Land Use & Environmental Law* (Vol. 29, Spring 2014)

Toward a North American Energy Strategy, *Resources* 186 (2014).

Reprint of a portion of Critical Questions Report, *Environmental Management*, July 2014.

[The Natural Gas Revolution: Critical Questions for a Sustainable Energy Future](#) (with [Raymond J. Kopp](#), Kristin Hayes, Skyler Roeshot) *RFF Report*, March, 2014.

Attaining Sustainable Development of Oil and Gas in North America: A Review of the Environmental Regulatory Landscape, (with Ray Kopp) *RFF Report* for the North American Energy Summit, NY, June 2014.

“Understanding the Risks of Unconventional Shale Gas Development,” (with a number of other authors) *Environmental Science and Technology* **48**(15) August, 2014.

“Using Ecological Production Theory to Define and Select Environmental Commodities for Nonmarket Valuation,” with James Boyd. 2013. *Agricultural and Resource Economics Review* **42** (1), 1-32. (April)

"What the Experts Say About the Environmental Risks of Shale Gas Development," (with Hal Gordon). 2015. *Agricultural and Resource Economics Review* **44** (2), 106-119 (August).

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“Shale Gas Development in China: A Comparison with the US Experience,” (with Xiaoli Liu, Lei Tian and Zhongmin Wang)) *Energy Policy* (forthcoming)

“Environmental Risks of Shale Gas Development in China: An Assessment Framework,” (with Zhongmin Wang and Yushuang Wang) *Energy Policy* (forthcoming).

“Shale Gas: Its Environmental Regulatory Environment and What it May Portend,” *Electricity Journal* (forthcoming)

"Risks and Risk Governance in Unconventional Shale Gas Development," (with Sheila Olmstead, Nathan Richardson, and others), *Environmental Science and Technology* (forthcoming)

“The truth, the whole truth and nothing but the truth: a multi-country test of an oath script,” (with Fredrik Carlsson, Mitesh Kataria, Elina Lampi, Åsa Löfgren, Ping Qin, Susie Chung, and Thomas Sterner), *Journal of Economic Behavior & Organization* (forthcoming).

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“Shale gas development impacts on surface water quality in Pennsylvania,” with Sheila M. Olmstead, Lucija A. Muehlenbachs, Jhih-Shyang Shih, and Ziyang Chu, *Proceedings of the National Academy of Sciences* Vol. 110, No. 13, pp. 4962-4967, March 2013.

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“Valuation of Cancer and Microbial Disease Risk Reductions in Municipal Drinking Water: An Analysis of Risk Context Using Multiple Valuation methods.” With Victor Adamowicz, Diane Dupont and Jing Zhang, *Journal of Environmental Economics and Management* Volume 61, issue 2 (March, 2011).

“Do U.S. Shale Gas Resources Provide a Bridge to a Low-Carbon Future?” with Stephen P. A. Brown and Margaret A. Walls, *Issue Brief*, Resources for the Future (April, 2011).

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with Sandra Hoffmann, Bjorn Larsen, Xizhe Peng, Cheng Gangcai, with Ran Tao, Chen Yan and Michael
McWilliams in *The Costs of Pollution in China*, The World Bank, forthcoming.

“Are Decisionmakers at Home on the Range?” (with Richard Morgenstern and Peter Nelson) *Journal of
Risk Research* (2008).

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Reducing Acidification in the Adirondacks Park.” 2008. With David A. Evans, H. Spencer Banzhaf, Dallas
Burtraw and Juha Siikamaki *Saving Biological Diversity: Balancing Protection of Endangered Species and
Ecosystems* Robert A. Askins, Glenn D. Dreyer, Gerald R. Visgilio, New York: Springer.

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Panels: A Demonstration Using Foodborne Pathogens.” 2008. with Sandra Hoffmann, Paul Fischbeck,
and Michael McWilliams *Reliability Engineering and Safety Systems* **93**, 5 687-698 (May)

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Economics and Policy* **1** (2), 261-282.

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Mizuho Bank Group for METI, Japan (March).

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Surveys (with David Evans). 2007. *AERE Newsletter* (November).

“Eliciting from Large Heterogeneous Expert Panels: Using Multiple Uncertainty Measures to
Characterize Information Quality in Decision Analysis.” (with Sandra Hoffmann, Paul Fischbeck and
Michael McWilliams). 2007. *Decision Analysis* **4**(2), 91-109 (June).

“Using Expert Elicitation to Link Foodborne Illness in the U.S. to Food.” 2007. Sandra Hoffmann, Paul
Fischbeck, Alan Krupnick, Mike McWilliams *Journal of Food Protection* **70**(5) pp. 1220-1229 (May).

“Supporting Questions in Stated Preference Surveys,” (with Vic Adamowicz). 2007. in *Valuing
Environmental Amenities Using Stated Preference Choice Studies: A Common Sense Approach to Theory
and Practice*. Barbara Kanninen, ed. (Springer, New York).

“How People Value What Nature Provides,” (with Juha V. Siikamäki) *Resources*, Spring 2007 (165).

“Rising to the Challenge: Integrating Social Science into NSF Environmental Observatories,”
Shalini Vajjhala, Alan J. Krupnick, Ellie McCormick, Morgan Grove, Patricia McDowell, Charles Redman,
Leonard A. Shabman, and Mitchell Small, *RFF Report* September 2007.

“Regional Air Quality: Local and Interstate Impacts of NO_x and SO₂ Emissions on Ozone and Fine Particulate Matter in the Eastern United States,” 2007. With Michelle S. Bergin, Jhih-Shyang Shih, James W. Boylan, James G. Wilkinson, M. Talat Odman, and Armistead G. Russell *Environmental Science and Technology* Vol. 41, No. 13., 4677-4689.

“Age, Health, and the Willingness to Pay for Mortality Risk Reductions: A Contingent Valuation Survey in Japan” (with Kenshi Itaoka, Aya Saito, Makoto Akai, Maureen Cropper, Anna Alberini, and Nathalie Simon). 2007. *Environmental Economics and Policy Studies* 8(3) 211-237.

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“Health, Environment, and Urban Air Quality,” in *Economic Development and Environmental Sustainability*, Michael A. Toman and Ramon Lopez, eds., Initiative for Policy Dialogue Series, Oxford University Press, Oxford, 2006.

“Willingness to Pay for Mortality Risk Reductions: Does Latency Matter?” (with Anna Alberini, Maureen Cropper and Nathalie Simon) *Journal of Risk and Uncertainty* 32(3) (May, 2006).

“Valuation of Natural Resource Improvements in the Adirondacks” (with Spencer Banzhaf, Dallas Burtraw, David Evans) *Land Economics* 82(3) 445-464 (August) 2006.

“The Ancillary Carbon Benefits of SO₂ reductions: A Small-Boiler Policy in Taiyuan, People’s Republic of China,” (with Richard Morgenstern and Xuehua Zhang) in *Small Firms and the Environment in Developing Countries: Collective Impacts and Collective Action*, Allen Blackman, Ed. (RFF Press, Washington DC) (2006).

“Economic Uncertainties in Valuing Reductions in Children's Environmental Health Risks” (with Sandra Hoffmann and Vic Adamowicz) in *Economic Valuation of Environmental Health Risks to Children* Pascale Scapecchi, ed. Organisation for Economic Cooperation and Development, Paris, 2006

“Demonstrating Emissions Trading in Taiyuan, China (with Richard Morgenstern, Robert Anderson, Ruth Bell, and Xuehua Zhang). 2005. *The RFF Reader in Environmental and Resource Policy*, 2nd Edition, Wallace E. Oates, Editor, RFF Press (note: this is an updated version of an article that originally appeared in *Resources*).

“How Much Will People Pay for Longevity?” 2005. *The RFF Reader in Environmental and Resource Policy*, 2nd Edition, Wallace E. Oates, Editor, RFF Press (note: this is an updated version of an article that originally appeared in *Resources*).

"The Interstate Transport of Air Pollution: A Regulatory Dilemma" (with Jhih-Shyang Shih). 2005. *The RFF Reader in Environmental and Resource Policy*, 2nd Edition, Wallace E. Oates, Editor, RFF Press.

"Economics of Pollution Trading for SO₂ and NO_x." (with Dallas Burtraw, David A. Evans, Karen Palmer, and Russell Toth). 2005. *Annual Review of Environment and Resources*, Volume 30, 253-289, November.

Not a Sure Thing: Making Regulatory Choices under Uncertainty (with Michael Batz, Dallas Burtraw, Michael McWilliams, Richard Morgenstern, Per-Kristian Nelson, Jhih-Shyang Shih, RFF Report, 2005.

"Forever Wild, But Do We Care? How New Yorkers Value Natural Resource Improvement" (with H. Spencer Banzhaf, Dallas Burtraw, David Evans) *Resources* Summer 2005 (158)

"Best Things First: Rethinking Priority-Setting for Food Safety Policy," (with Peter Nelson) in *Toward Safer Food: Perspectives on Risk and Priority-Setting*, Sandra A. Hoffmann and Michael R. Taylor, eds. (Resources for the Future, Washington, DC) 2005.

"Emissions Trading to Improve Air Quality in an Industrial City in the People's Republic of China," (with Richard D. Morgenstern, Piya Abeygunawardena, Robert Anderson, Ruth Greenspan Bell, and Jeremy Schreifels) in *China's Environment: The Challenges of Sustainable Development*, Kris Day, ed., M.E. Sharpe, publisher, 2005.

"The Value Of Good Quality Drinking Water To Canadians And The Role Of Risk Perceptions: A Preliminary Analysis" Adamowicz, W., Dupont, D.P. and Krupnick, A. 2004. in *Journal of Toxicology and Environmental Health. Part A: Current Issues*. 67(20-22): 1825-1844.

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"Regional Air Quality Management," (with Jhih-Shyang Shih) in *New Approaches on Energy and the Environment: Policy Advice for the President*, Richard D. Morgenstern and Paul R. Portney, eds. (Resources for the Future, Washington, DC) 2004.

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“The Future of Cost-Benefit Analysis at EPA,” (with Richard D. Morgenstern) *The Annual Review of Public Health* 23, pp. 427-48, 2002.

“The Value of Reducing Risk of Death: A Policy Perspective,” *Journal of Policy Analysis and Management* 21 (2) pp. 275-278, 2002.

"Benefits Transfer and the Value of Food Safety," *Proceedings of a Workshop on Valuing The Health Benefits of Food Safety*, sponsored by U.S. EPA, USDA, CDC, FDA, and FSIS, University of Maryland, September 14, 2000 (forthcoming).

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Sector Effects of the Shale Gas Revolution in the United States, Alan J. Krupnick, Zhongmin Wang, Yushuang Wang, Conference on Shale Gas Development in China, NDRC and Energy Foundation organizers. Beijing, November 2012. See also RFF Discussion Paper 13-21, July 2013

A Retrospective Review of Shale Gas Development in the United States: What Led to the Boom?

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The truth, the whole truth and nothing but the truth: a multi-country test of an oath script, (with Fredrik Carlsson, Mitesh Kataria, Alan Krupnick, Elina Lampi, Åsa Löfgren, Ping Qin, Susie Chung, and Thomas Sterner), paper delivered at the World Congress of Environmental and Resource Economists, Montreal, Canada, July, 2010..

People’s perception of fair burden-sharing: A study in the US and China, (with Fredrik Carlsson, Mitesh Kataria, Alan Krupnick, Elina Lampi, Åsa Löfgren, Ping Qin, Susie Chung and Thomas Sterner). Paper to be delivered at the AERE Summer Meeting, Seattle, 2011.

The Willingness to Pay for Mortality Risk Reductions in China (with Sandy Hoffmann and Ping Qin. paper delivered at the World Congress of Environmental and Resource Economists, Montreal, Canada, July, 2010..

“The Definition and Choice of Environmental Commodities for Non-Market Valuation.” James Boyd and Alan Krupnick, paper delivered at the EAERE meetings in Amsterdam, June, 2009

“Altruism and the WTP for Improved Drinking Water,” Alan Krupnick, Jing Zhang, Victor Adamowicz, and Diane Dupont, EAERE Annual Conference, June 30, 2008.

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“Effects of Urban Density on Vehicle Use and Ownership,” (with Margaret Walls and Winston Harrington) Paper presented at the ASSA Annual Meeting, Atlanta, GA, January 5-7, 2002.

“Mortality Risk Valuation: A Survey of U.S. Residents,” (with Anna Alberini) Paper prepared for presentation to the CORILA Conference on Economic Valuation of Environmental Goods, Venice, May 11, 2001.

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"Incentive Policies for Industrial Pollution Control in China," presented at the annual meeting of the ASSA, New Orleans, LA, January 2-5, 1992.

Annual Conference of the National Association of Regulatory Utility Commissions, Williamsburg, VA, December 1991. Resources for the Future Discussion Paper QE92-15 (with Dallas Burtraw), Washington, DC, April 1992.

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"The Cost-effectiveness of Methanol Vehicles" (with Margaret Walls) presented at the ASSA annual meeting, Washington, DC, December 26-28, 1990.

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"The Social Costs of Chronic Heart and Lung Disease" (with Maureen Cropper) presented at AERE Workshop, May 1989; Resources for the Future Discussion Paper QE89-16.

"Tradable Nutrient Permits and the Chesapeake Bay Compact," presented at the annual meeting of the Allied Social Science Associations, New York, NY, December 28-30, 1988; Resources for the Future Discussion Paper QE89-07.

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"Economics and Nutrient Management in the Chesapeake Bay," presented at the Annual Conference on the Economics of Chesapeake Bay Management, Baltimore, MD, May 23-25, 1988.

"The Temporal and Spatial Control of Ambient Ozone," presented at the Annual Meeting of the Air Pollution Control Association, Dallas, TX, June 20-24, 1988.

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"Air Pollution and Acute Health Effects: New Evidence," (with Winston Harrington) presented at the Environmental Law Institute-Environmental Protection Agency Joint Seminar Series, November 20, 1986.

"Estimating the Uncertainties in the Benefits of Management Strategies for Controlling Groundwater Contamination," presented at the Annual Meeting of the Society for Risk Analysis, Boston, MA, November 10, 1986.

"Lung Function as a Risk Factor for Acute Respiratory Disease: An Epidemiological Study," (with Winston Harrington) presented at the Air Pollution Control Association Conference, Detroit, MI, June 1985.

"Managing the Chesapeake Bay Clean-Up: A Modeling Approach," presented at the Eighth Biennial International Estuarine Research Conference, Durham, NH, July 1985.

"Air Pollution and Acute Respiratory Disease in Children: A Micro-epidemiological Analysis," (with Winston Harrington) presented at the annual meeting of the Allied Social Science Associations, Dallas, TX, December 1984.

"What Makes EPA Run? An Empirical Analysis of EPA Rulemaking Behavior," presented to the Conference on Implementation of Environmental Regulation: International Comparisons, Berlin, Germany, October 1981.

"Equity and Efficiency in the Promulgation of Federal Regulations: The Case of EPA's Effluent Discharge Standards" (with Winston Harrington) presented at the American Economic Association Conference, Denver, CO, September 1980.

"On the Design of a Market for Air Pollution Rights: The Spatial Problem" (with Wallace Oates) presented at the Western Economics Association Conference, San Diego, CA, June 1980.

"Regulatory Rulemaking in Theory and Practice: The Case of EPA's Effluent Guidelines" (with Wesley A. Magat and Winston Harrington) presented at Western Economic Association Conference, San Diego, CA, June 1980.

"An Economic-Environmental Planning Manual for Counties, States, and Metropolitan Areas" (with J.H. Cumberland) BBER Working Paper #1, presented at the Regional Science Association Meetings, November 11, 1977.

Recent Presentations

FY2015 Presentations

- July 9, National Governor's Association meeting, presentation on shale gas risks and regulations
- June 12. Invited lunch guest of Michael Martin, Deputy Minister, Environment Canada, Canadian Embassy
- June 7-8. Invited participant, Aspen Institute, Aspen, CO
- June 3-4. Amazon paper presented at AERE Summer Conference, San Diego.*
- May 29. Presentation of Carbon tax on federal coal report. Domestic Policy Council, White House.
- May 28. Invited meeting with French Embassy officials, shale gas
- May 18. Keynote presentation, Shale Gas Science, National Academy of Sciences.
- April 29. Briefing, Senate staff, Carbon tax on federal coal.
- April 22. Invited expert to meeting on cost-benefit methodology, World Bank *
- March 3-6. NGA expert workshop. Shale gas impacts and regulations
- February 9. Invited guest. BASF, National Harbor and ARPA-E
- February 5-6. Presentation on Shale Gas Risks and Economics. Stanford National Gas Initiative Inaugural Event, Stanford, CA.
- December 11 (2014). Presentation on shale gas regulations. National Conference of State Legislators 2014 Forum, Washington, DC.
- December 10 (2014). Presentation of Expert Survey Results. National Research Council's Roundtable on Science and Technology for Sustainability - Energy-Water Nexus, Washington, DC
- December 3. Invitation to speak at Governors' Policy Forum on Responsible Shale Energy Development, Denver, CO. (Sheila Olmstead substituted).
- November 19-20. Presentation on shale gas. American Geophysical Union Board Workshop, Dallas
- November 12-13. Presentation on shale gas boom lessons. IMF conference, Munich.

- November 7. Panel Presentation, shale gas. World Affairs Councils of American 2014 National Conference, Washington, DC.
- October 30-31. Sloan research Conference. Rice University, Baker Center
- October 14. Presentation. Aspen Institute, Washington, DC
- October 2. Invited participant. Funders meeting on methane management.
- September 29-30. Presentation Shale Gas. North American Natural Gas Forum, Washington, DC
- September 30. Invitation to Dutch Embassy. Shale gas
- July 24. Presentation, NGA meeting. Washington, DC

FY2013 presentations on shale gas research and issues given at the following meetings, workshops, conferences:

- Aspen Institute, Aspen, CO
- Union of Concerned Scientists workshop and event, UCLA, Los Angeles, CA
- Association of Environmental and Resource Economists Annual Meeting, Banff, Alberta, CA
- Joint Global Change Research Institute workshop. Cambridge, Maryland
- Meetings with U.S. House and Senate staff, Washington, DC
- International Energy Agency Shale Gas conference, Paris
- International Council for Clean Transportation, Washington, DC
- Filmed for Rational Middle Series, Greg Kallenberg, Producer
- World Bank Seminar, Washington, DC
- International Monetary Fund seminar, Washington, DC
- Department of Energy talk, Washington, DC
- University of Chicago, Harris School, Seminar, Chicago, IL
- American Trucking Association Conference, Arlington, VA
- National Development Research Council and Energy Foundation, Shale Gas conference, Beijing
- American Public Health Association conference, San Francisco
- Baker Forum on Natural Gas and Electricity, Knoxville
- Baker Institute event, Newseum, Washington, DC
- Bipartisan Policy Commission, Washington, DC
- Several panels organized by the National Journal, Washington, DC
- New Zealand Ministry for the Environment, French Embassy, UK Embassy, Washington, DC
- American Institute for Contemporary German Studies event, Washington, DC
- CERES AND BSR event at Corporate Social Responsibility conference, San Francisco,
- JPMorgan meeting, New York
- National Academy of Sciences Shale Gas Risks public meeting, Washington, DC

Issues in Valuing Chesapeake Bay Resources, presented at Chesapeake Bay Valuation workshop, USEPA, Washington, DC, October 2011.

What Is the Best Policy Instrument for Reducing CO2 Emissions? Presented at Fiscal Policy to Mitigate Climate Change, IMF, March 2012. (with Ian Parry).

The Social Costs of Energy, various Portuguese cities, for U.S. State Department. September 2011.

Banzhaf, et al, VALUATION OF BIOLOGICAL ENDPOINTS IN THE SOUTHERN APPALACHIAN MOUNTAIN REGION, presented at the AERE Spring conference, June, 2011.

The Value of Life: Priceless; The Value of Reducing Death Risks: Not, before an Institute of Medicine Panel on valuation of energy externalities, October 2011.

Valuing TMDL Implementation in the Chesapeake Bay Region, NOAA workshop on Elwah River dam removal. Asheville, NC. June 6, 2012

The Future of JEEM, Spring meeting of AERE, Asheville, NC, June 4-5, 2012

Distinguished Speaker Series, Colorado Mountain College, US Energy Policy Options, Breckenridge, CO (March, 2010)

Who Speaks for the Household? Differences in Spouses' Willingness to Pay and How These are Resolved in a Couple, (Sandy Hoffmann presenting, with Vic Adamowicz, W133 Annual Meeting, Tucson, AZ, February 2010.

Household Bargaining and Stated Preference Surveys: Parental Valuation of Risk and IQ loss and ADHD, (Sandy Hoffmann presenting, with Vic Adamowicz) Society for Risk Assessment Annual Meeting, Baltimore, MD., December 2009.

The Implications of Behavioral Economics for Stated Preference Research, at New Ideas for Risk Regulation, SRA-RFF Conference, RFF Conference Center, June 2009.

Abundant Shale Gas Resources: Implications for Natural Gas Price Stability, NCEP Workshop, May 2009. (with Steve Brown)

Valuation of Ecosystem Services, presentation (with Jim Boyd) at the USEPA presentation, July 2009

U.S. Energy Policy Options: preliminary results. Presented to the Executive Office of the President, OEOB, December 2009. (with RFF team).

Incorporating Equity Concerns in Benefit-Cost Analysis, presented at a USEPA Symposium Strengthening Environmental Justice Research and Decisionmaking (Maureen Cropper presenting), March 2010.

The Role of Altruism in the Valuation of Community Drinking Water Risk Reductions, Jing Zhang, Wiktor Adamowicz, Alan Krupnick and Diane Dupont (Krupnick presenting), EAERE Conference, Gothenberg, Sweden (June, 2008).

The Value of Life: Priceless; Reducing death risks: Not. An Application to China

Joint Departmental Symposium | University of New Hampshire, December, 2009

The Value of Life: Priceless; Reducing death risks: Not. An Application to China, Penn State University, Dean's lecture Series, September 26, 2008

Critique of the Clean Air Mercury Rule RIA, Workshop on Reforming Cost-Benefit Analysis | June 15, 2008

WTP for Reducing Hazardous Air Pollutants, EPA Toxic Benefits Workshop April 28, 2009, Arlington, VA.

Acceptable Risk from Flooding and the Value of Statistical Life, Conference on Acceptable Risk, US Army Corps of Engineers and other agencies, Alexandria, Va., March 2008.

Valuing Mortality Risk Reductions for Homeland Security Meeting, DHS, February 2008.

Mortality Risk Valuation in China, World Bank Economics Seminar Series, February, 2008.

Frontiers of Environmental Economics: Chair of session, AEA Meetings, New Orleans, January 2008

Value of Statistical Life and Age, Society for Risk Analysis Annual Meeting, Austin, TX December 11, 2007

IOM Recommendations for Valuing Health in Regulatory Cost-Effectiveness Analysis

(with Lisa Robinson and Wilhelmine Miller) Society for Risk Analysis Annual Meeting, Austin, TX December 11, 2007

WTP for Mortality Risk Reductions in China (with Sandra Hoffmann) Society for Risk Analysis Annual Meeting, Austin, TX December 10, 2007.

Economic and Health Issues in Regulating Mercury Air Emissions, Virginia Mercury Symposium, Secretary for Natural Resources, State of Virginia, Newport News, VA. November 27, 2007.

Mortality Risk Valuation in China, Alan Krupnick, Seminar Tsinghua University, Beijing, October 31, 2007

RFF and The Environment For Development Program, Beijing University. Beijing Center for Environmental Economics, Beijing University, Beijing, October 30, 2007.

Mortality Risk Valuation in China, at Linking Issues to Motivate Chinese Climate Policies, Cicero & ECON, Oslo, Norway, August 30, 2007

Progress Report on SAMI Project, (With Juha Siikamaki and Shalini Vajhalla), Valuing Ecosystem Services, USEPA, NCEE, Crystal City, Alexandria, VA, April 24, 2007

Discussant for paper on Altruism and the WTP of Parents for Health Improvements, American Economic Association Meetings, AERE, Chicago, January 5, 2007

Willingness to Pay for Mortality Risk Reductions in Shanghai and Chongqing, China by Alan Krupnick at World Bank/SEPA Conference for a Green China | March 2, 2007

Cost-Benefit Analysis for Air Pollution Control in China, Alan Krupnick, World Bank/SEPA Conference for a Green China | March 2, 2007

The Willingness to Pay for Reducing Death by Crime: Tapping into the Environmental Economics Literature, before the International Workshop on Cost-Benefit Analysis of Criminal Justice, Urban Institute, January 2007.

"Ecosystem Services and Monetary Valuation," RFF Workshop on Ecosystem Services, RFF, Washington, DC, February 2006.

"The Generational Divide in Environmental Policy: Should Seniors' Lives be Discounted?" Forum on Science, Ethics and Policy, University of Washington, Seattle, Washington, April, 2006.

"Are Decisionmakers at Home on the Range?" Conference on Cost-Benefit Analysis, University of Washington, Seattle, Washington, April, 2006.

"Comments on Proposed OMB Risk Assessment Bulletin Conference: National Academy of Sciences NAS, Washington, DC, April, 2006.

"Using Expert Elicitation to Attribute Pathogen-specific Foodborne Illness to Food Consumption in the U.S." Poster Session at Priority setting of foodborne and zoonotic pathogens, European Union MED-VET-NET Network of Excellence and the US Food Safety Research Consortium, Berlin, July 2006.

"Valuing Food Safety," Priority setting of foodborne and zoonotic pathogens, European Union MED-VET-NET Network of Excellence and the US Food Safety Research Consortium, Berlin, July 2006.

"Mortality and Morbidity Benefits of Drinking Water Improvements," U.S. EPA NCER/NCEE Workshop Morbidity and Mortality: How Do We Value the Risk of Illness and Death? USEPA, L'Enfant Plaza, Washington, D.C., May, 2006.

"Parental Decision-Making and Children's Health" U.S. EPA NCER/NCEE Workshop Morbidity and Mortality: How Do We Value the Risk of Illness and Death? U.S. EPA, Washington, DC (with Sandra Hoffmann), May 2006.

"Experience with Web-Based Surveys," U.S. EPA NCER/NCEE Workshop Morbidity and Mortality: How Do We Value the Risk of Illness and Death? U.S. EPA, L-Enfant Plaza, Washington, DC, May 2006.

“Social Science Integration into CLEANER (NSF Observatory),” CLEANER All-Hands Meeting
Arlington, VA, March 2006.

Mortality Risk valuation in China: Results from a Stated Preference Survey ,” First Joint Seminar of the
Economics Department and China Department, World Bank, Washington, DC, March 2006
(with Sandra Hoffmann)

“Using Expert Elicitation to Attribute Foodborne Illness to Specific Foods,” Society for Risk Analysis 2005
Annual Meeting (given by Sandra Hoffmann) Tampa, Florida, November 2005.

“What's Uncertainty Have to Do With It? NRC Committee on Models in the Regulatory Decision Process
National Research Council, Washington, D.C., November 2005 (with Dallas Burtraw and Richard
Morgenstern)

“Performance Standards For Food Quality: What can be Learned from EPA?” USDA Meeting, USDA,
Washington, D.C. November 2005. (with Sandra Hoffmann).

“Urban Air Pollution, Health and Policy Instruments,” plenary session presentation at *Energy Week 2005*,
World Bank, Washington, DC.

“Emissions Trading in Taiyuan, China,” presentation to NERAM IV, Mexico City, February 2005.

“Challenges for Air Pollution Control in Developing Countries,” presentation to NERAM IV, Mexico City,
February 2005.

“Air Pollution and Cost-Benefit Analysis,” presentation to staff of the U.S. House of Representatives,
December 2004.

“Valuation of Improvements to the Adirondacks Ecosystem,” Resources for the Future Seminar Series,
April, 2004. Also, NCEE Seminar Series, May 2004. Also, presentation for U.S. EPA, March 2004 (with
Dallas Burtraw, Spencer Banzhaf and David Evans).

“Economics at the Council of Economic Advisors,” at the annual meeting of the Allied Social Science
Associations, San Diego, CA, January 2004.

“Health, Environment, and Urban Air Quality,” workshop on Environment and Development Economics,
Institute for Policy Dialogue. Columbia University, December 2003.

“Can Experience with Environmental Performance Standards Inform Food Safety Regulation?” (with
Sandra Hoffmann) at a USDA Workshop, December 2003.

“The Senior Discount,” at the RTI Research Fellows Seminar Series, Research Triangle Park, NC,
November 2003.

“Cost-Benefit Analysis and Health Valuation,” seminar at the George Washington University School of
Public Health, November 2003.

“Regulatory Impact Analyses and Health Valuation.” (with Richard Morgenstern) seminar to members of a delegation from South Korea hosted by U.S. AID, October 2003.

“Market-Based Innovations” at a conference Clearing the Path to Clean Air: Strategic and Technological Innovations for Ozone SIP Development, March 12 – 14, 2003, Arlington, VA.

Use of Short-Term and Long-Term Mortality Risk Studies in Policy Analysis, Health Effects Institute Annual Conference in Boulder, CO., May 2003.

“Use of Cost-Benefit Analysis,” to workshop hosted by Swedish EPA, Stockholm, Sweden. 2003.

“Children’s Health Valuation” (with Sandra Hoffmann and Vic Adamowicz) at the EPA, NCEE Workshop on Children’s Health Valuation, 2003.

“State of the Art in Estimating the Value of Statistical Life” and “An Evaluation of the Cost-benefit Analysis Performed by the Canadian Government in Support of Their National Ambient Air Quality Standards for Ozone and PM2.5,” at the International Conference on Health, Environment, and Economics, sponsored by the Air and Waste Management Association, Ottawa, Ontario, Canada, November 18-20. 2002.

The WTP for Delayed Mortality Risk Reductions (with Maureen Cropper, Anna Alberini, and Nathalie Simon) for presentation to the Second World Congress of Environmental and Natural Resource Economists, Monterey, CA, June 29, 2002.

Ancillary Carbon Reductions from SO₂ Reductions in China: Results of a Survey (with Richard Morgenstern) prepared for the US EPA, June 2002, for presentation to the Second World Congress of Environmental and Natural Resource Economists, Monterey, CA, June 29, 2002.

Source-Receptor Relationships for Ozone and PM_{2.5} in the Eastern U.S. (with Ted Russell, Michelle Bergin and Jhih-Shyang Shih) for presentation to the Second World Congress of Environmental and Natural Resource Economists, Monterey, CA, June 29, 2002.

“The Effect of Risk and Individual Characteristics on the Willingness to Pay for Mortality Risk Reductions,” presented at Economic Valuation of Health for Environmental Policy: Assessing Alternative Approaches, University of Central Florida, March 18-19, 2002. Sponsored by the U.S. EPA.

“Power Plants and Clean Air: Proposed Reforms of the Clean Air Act,” SAIS Energy/Environment Seminar Series, Washington, DC, March 2002.

“Approaches to Estimating the Value of Statistical Life,” Department of Transportation Briefing, February 21, 2002.

“Factors Affecting the Willingness to Pay for Mortality Risk Reductions,” presented at an EPA-sponsored conference on the Valuation of Mortality Risks, Silver Spring, Maryland, November 2001.

Gave RFF Wednesday Seminar Series talk: Mortality Risk Valuation in the Context of Air Pollution, March 2001 (with Anna Alberini).

“Age, Health and the Willingness to Pay for Mortality Risk Reductions,” (With Maureen L. Cropper) presented at Harvard School of Public Health (February, 2001).

“Age, Health and the Willingness to Pay for Mortality Risk Reductions,” presented at The Measurement and Economic Valuation of the Health Effects of Air Pollution, A symposium sponsored by the UK Department of the Environment, Transportation, and Regions, London, February 19-20, 2001.

“Age, Health and the Willingness to Pay for Mortality Risk Reductions,” invited paper presented to the MacMaster University School of Public Health, Ontario, Canada, December 2000.

“Age, Health and the Willingness to Pay for Mortality Risk Reductions,” Workshop on the Value of Mortality and Morbidity, Brussels, Belgium, November 13, 2000.

“The Ancillary Benefits and Costs of Climate Change Mitigation,” given at the Fifth Annual Global Climate Change Research Seminar, Electric Power Research Institute, Wyndham City Center Hotel, Washington, DC, May 17-18, 2000.

“Methods for estimating ancillary benefits of climate change mitigation,” given at *Methods Development for Estimating Ancillary Benefits of Climate Mitigation*, sponsored by various Canadian government agencies: Calgary, Canada, May 3-4, 1999.

“Mortality risk valuation in adults,” at *EPA-NSF Health Valuation Workshop*, Arlington, VA, March 15-16, 1999.

“Environmental Effects of Electric Vehicles Charged at Night,” at Transportation Research Board *Annual Conference*, Washington, DC, January 1999.

“Health Risks and Valuation in Ukraine,” to World Bank staff and Ukrainian visitors, November 1998.

“Assumptions for Estimating Ancillary Benefits of Climate Policy,” presented at Climate Change Economic Analysis Forum’s Workshop: *Critical Assumptions: What Matters...What Doesn’t*, Chateau Cartier Hotel, Aylmer, Quebec, Canada, October 1998.

“Incentives for Mobile Source Pollution Control,” presented before the National Advisory Council on Environmental Policy and Technology, of the EPA Office of Reinvention, Sheraton Hotel, Washington, DC, September, 1998.

“Research Needs for Cost-Benefit Analysis of Air Quality Standards,” presented at the Annual Meeting of the American Association of Agricultural Economics, Salt Lake City, UT, August 3, 1998.

“Environmental Economics,” lectures given at the World Bank’s Environmental Economics for Development Policy Course, July 8, 1998.

“Chesapeake Bay and Control of NO_x Emissions: A Policy Analysis,” presented at the Duke-RTI Environmental and Resource Economics Seminar Series, RTI, NC, June 4, 1998.

“Research Needs for Better Cost-Benefit Analyses,” presented at the North Carolina State Economics Seminar Series, Raleigh, NC, June 3, 1998.

“Mortality Risk Valuation,” presented at the Executive Branch Economics Interagency Work Group, Old Executive Office Building, April 7, 1998.

“Mortality Risk Valuation,” at EPA/NSF Partnership Conference, RFR Conservation Center, April 2-3, 1998.

“Economic and Legal Issues Associated with the Ambient Air Quality Standards for Ozone and Particulates,” presented at Pace University Law School Colloquium: *Science and Public Policy: New Ambient Air Quality Standards Under the Clean Air Act*, White Plains, New York, February 27, 1998.

“Estimating the Benefits of Environmental Improvements,” presented to MITI, Tokyo, Japan, January 22, 1998

“The Social Costs of Transportation,” presentation at the Annual Meeting of the Transportation research Board, Washington, DC, January 15, 1998.

“The Economics of Environmental Health Improvements: Background Document,” for the World Health Organization Workshop, London, June 15, 1997.

“The Costs and Benefits of the Proposed Air Quality Standards,” Air Pollution Policy: Symposium on EPA’s Proposed Standards for Ozone and Particulates, Resources for the future, February 10, 1997.

“Cost-Benefit Analysis and the Proposed Standards for Ozone and PM,” Kennedy School of Government, Continuing Education Program, Harvard University, Cambridge, Mass, March, 1997.

“The Proposed Ozone and PM Standards: Economic Issues,” Massachusetts Institute of Technology, March, 1997.

“Reforming Superfund: Risk Assessment, Cost-effectiveness, and Cost-benefit Analysis,” given at the Cost-Benefit Analysis Workshop, OSWER, EPA, Washington, DC, March 22, 1995.

“Risk Tradeoffs in Superfund Policy,” given at a symposium: Weighing the Risks, Washington, DC, March 30-31, 1995.

“Environmental Policy and the Contract with America,” presentation for the LaFollette Institute of Public Affairs, Madison, WI, April 20, 1995.

“The Future of Environmental Policy,” presentation for the Energy Forum, New York, NY, May 17, 1995.

“The Air Pollution Costs of Transportation: Literature Review and Issues,” presented at the DOT Workshop on the Social Costs of Transportation, Irvine, California. July 5-7, 1995.

Reports/Discussion Papers

VALUATION OF ECOSYSTEM SERVICES IN THE SOUTHERN APPALACHIAN MOUNTAINS (WITH H. Spencer Banzhaf, Dallas Burtraw, Susie Chung, Bernard J. Cosby, David A. Evans and Juha Siikamaki), submitted to *Environmental Science and Technology*

“The Willingness to Pay for Mortality Risk Reductions in China,” (with Sandra Hoffmann and Ping Qin) submitted to *Environmental and Resource Economics*

Ecosystem Services Indicators: Improving the Linkage Between Biophysical and Economic Analyses (with James Boyd, Paul Ringold, Robert J. Johnston, Matthew A. Weber and Kim Hall) (manuscript to be submitted to *International Review of Environmental and Resource Economics*).

Information and the Willingness to Pay to Reduce Shale Gas Risks (with Juha Siikamaki) (to be submitted to *JAERE*)

Putting a Carbon Charge on Federal Coal: Legal and Economic Issues (with Joel Darmstadter, Nathan Richardson, and Katrina McLaughlin, RFF DP 15-13 (March, 2015)

Willingness to Pay of Parents for Reducing Their Child’s Lead Pain Risks (with Sandra Hoffmann) (unpublished manuscript)

Willingness to Pay to Protect the Amazon Rainforest (with Jon Strand, Juha Siikamaki and Jeffrey Vincent) (unpublished manuscript)

Valuation of Coastal Ecosystems in the Gulf of Mexico: A Five State Choice Experiment, (with Juha Siikamaki, Cristina Carollo and David Yoskowitz) (unpublished manuscript).

For Shale gas related RFF publications, see the RFF website/Center for Energy Economics and Policy

Examining the Effectiveness of Federal Energy Policy Combinations, David McLaughlin, Louis Preonas, Matt Woerman, Anthony Paul, Karen Palmer, Alan Krupnick and Carolyn Fischer, RFF Discussion Paper (forthcoming)

Improving Fuel Economy in Heavy-Duty Vehicles, Winston Harrington, Alan J. Krupnick, RFF Discussion Paper 12-02 | March 2012

Understanding the Costs and Benefits of Deepwater Oil Drilling, Alan Krupnick, Sarah Campbell, Ian Parry and Mark Cohen. Report to the President's Nation Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling. 2011. (January).

Energy, Greenhouse Gas, and Economic Implications of Natural Gas Trucks, Alan Krupnick, RFF, June, 2010

Valuing Mortality Risk Reductions from Reduced Temperatures. with Ping Qin, report submitted to Air Pollution Epidemiology Section, Office of Environmental Health Hazard Assessment, California EPA, Oakland, CA. December 15, 2010

The Willingness to Pay for Mortality Risk Reductions in Ulaanbaatar, Mongolia, Sandra Hoffmann and Alan Krupnick, Report to the World Bank. 2010 (December).

"Perspectives on Energy Policy and Economics Research," RFF Report (with Steve Brown, Kristin Hayes and Jan Mares. Report to the Bechtel Foundation. May, 2010.

Brown, Stephen P. A. and Krupnick, Alan, Abundant Shale Gas Resources: Long-Term Implications for U.S. Natural Gas Markets. Report to the Bipartisan Policy Commission, Washington, DC. (August, 2010). Available at SSRN: <http://ssrn.com/abstract=1666996>

Can Willingness to Pay for Equity be Incorporated into Health Benefits Analysis? with Maureen Cropper and Jeff Ferris. Report to NCEE, U.S. EPA. May, 2010.

The Willingness to Pay for Alternate-Fueled Vehicles (AFVs) (with Kenshi Itaoka, Alan Krupnick, Aya Saito and Makoto Akai). Report submitted to MITI, Government of Japan. 2010. February

"The Definition and Choice of Environmental Commodities for Non-Market Valuation." James Boyd and Alan Krupnick, RFF Discussion Paper 09-35 September 2009.

Willingness to Pay for Reducing Toxic Air Pollutants, Maureen L. Cropper, Senior Fellow, Resources for the Future, Alan J. Krupnick, Senior Fellow, Resources for the Future and Alexander Limonov, University of Maryland. Report for the U.S. EPA, NCEE. Spring 2009.

Valuing Mortality Risk Reductions in Homeland Security Regulatory Analyses: Final Report, June 2008, Prepared for: Elena Ryan, U.S. Customs and Border Protection, Department of Homeland Security, Lisa A. Robinson, Independent Consultant, with Joseph Aldy, James Hammitt and Alan Krupnick.

An Update on the Science of Acidification in the Adirondack Park, Anna Mische John, Dallas Burtraw, David A. Evans, H. Spencer Banzhaf, Alan J. Krupnick, and Juha V. Siikamäki RFF Discussion Paper DP 08-11 | May 2008.

Eliciting Information on Uncertainty from Heterogeneous Expert Panels: Improving Risk-Based Decision-making in the U.S. Sandra A. Hoffmann, Paul S. Fischbeck, Alan J. Krupnick, and Michael R. McWilliams, RFF Discussion Paper 06-17 | February 2008

US Climate Policy Developments, Toshi Arimura, Dallas Burtraw, Alan J. Krupnick, and Karen L. Palmer, RFF Discussion Paper 07-45 | October 2007

Valuation of Cancer and Microbial Disease Risk Reductions in Municipal Drinking Water: An Analysis of Risk Context Using Multiple Valuation Methods, Wictor Adamowicz, Diane Dupont, Alan J. Krupnick, and Jing Zhang, RFF Discussion Paper 07-39 | July 2007

Morbidity Valuation with a Cessation Lag: Choice Experiments for Public- and Private-Goods Contexts in Japan, Kenshi Itaoka, Alan J. Krupnick, Ava Saito, and Makoto Akai
RFF Discussion Paper 07-07 | July 2007; Revised July 2007

Eliciting Information on Uncertainty from Heterogeneous Expert Panels: Attributing U.S. Foodborne Pathogen Illness to Food Consumption (DP 06-17), June, 2006 (with Paul Fischbeck, Sandra Hoffmann, and Michael McWilliams).

Prioritizing Opportunities to Reduce the Risk of Foodborne Illness: A Conceptual Framework (FSRC-DP-03) (with Michael Batz and Sandra Hoffmann). June 2006.

Mortality Risk Valuation in Six Countries: Evidence from a Contingent Valuation Survey, to National Center For Environmental Economics, USEPA (with Soma Battacharya, Anna Alberini and Marcella Veronesi) June 2006.

“Cost of Environmental Degradation in Pakistan: An Analysis of Physical and Monetary Losses in Environmental Health And Natural Resources,” (with Bjorn Larsen and Elena Strukova), Report to The World Bank, Richard Damania, Project Officer, February 17, 2006

“Economic Uncertainties in Valuing Reductions in Children’s Environmental Health Risks,” (with W. Adamowicz and Sandra Hoffmann) RFF Discussion Paper 05-27.

“Age, Health, and the Willingness to Pay for Mortality Risk Reductions: A Contingent Valuation Survey in Japan” (with Kenshi Itaoka, Makoto Akai, Anna Alberini, Maureen Cropper, and Nathalie B. Simon RFF Discussion Paper 05-34 August 2005

“Willingness to Pay to Reduce Community Health Risks from Municipal Drinking Water: A Stated Preference Study” (with Adamowicz, V.; Dupont, D.P.). 2005. Report written for the US Environmental Protection Agency. October 2005. 62 pp.

“Uncertainty in Benefit-Cost Analysis: What’s Uncertainty Got To Do With It?” (with Richard Morgenstern, Dallas Burtraw, Peter Nelson, Michael Batz, Michael McWilliams). Report to the US Environmental Protection Agency, September 2005.

Economics of Pollution Trading for SO₂ and NO_x, (with Dallas Burtraw, David A. Evans, Karen L. Palmer, and Russell Toth) Resource for the Future (RFF) Discussion Paper 05-05, March 2005.

Valuation of Natural Resource Improvements in the Adirondacks, (with Spencer Banzhaf, Dallas Burtraw, and David Evans) RFF Discussion Paper, June 2004.

Willingness to Pay for Mortality Risk Reductions: Does Latency Matter? (with Maureen Cropper, Anna Alberini, and Nathalie Simon) FEEM Discussion Paper, 2004; RFF Discussion Paper 04-13; and NCEE Working paper #2004-01.

WTP for Mortality Risk Reduction of Electric Power Generation Systems and Influences of Risk Characteristics on WTP. (with Kenshi Itaoka, Aya Saito, Taketoshi Taniguchi and Vic Adamowicz) Fuji International Discussion Paper, 2004.

Identifying the Most Significant Microbiological Foodborne Risks to Public Health: A New Risk-Ranking Model (with Michael B. Batz, Sandra A. Hoffmann, J. Glenn Morris, Diane M. Sherman, Michael R. Taylor, Jody S. Tick) RFF Discussion Paper, 2004.

Source-Receptor Relationships for Ozone and Fine Particulates in the Eastern United States (with Jhih-Shyang Shih, Michelle S. Bergin and Armistead G. Russell) RFF Discussion Paper 04-25, 2004.

Valuation of Improvements in the Adirondacks ecosystem, Final Report to the U.S. EPA (EPA CX 826562-01-2), February, 2004.

Controlling Ozone and Fine Particulates: Cost Benefit Analysis with Meteorological Variability (with Jhih-Shyang Shih, Ted Russell and Michelle Bergin) RFF Discussion Paper 03-55, 2003.

Air Pollution Control Policy Options for Metro Manila. (with Richard Morgenstern, Carolyn Fischer, Kevin Rolfe, Jose Logarta and Bing Rufo) RFF Discussion Paper, June, 2003.

Ancillary Carbon reductions from SO₂ Reductions in China: Results of a Survey (with Richard Morgenstern) prepared for the U.S. EPA, June 2002.

Costs and Benefits of Fish Consumption Advisory for Mercury in the Chesapeake Bay, June 2002 (with Paul Jakus and Megan McGuinness) for Maryland Department of Natural Resources.

Mortality Risk Valuation In the U.S. and Canada, (forthcoming Discussion Paper) (with Maureen Cropper, Nathalie Simon, Anna Alberini, Joseph Cook). (3282)

A Review of the Socio-Economic Models and Related Components Supporting the Development of Canada-Wide Standards (CWS) for Particulate Matter (PM) and Ozone, 2001, An Expert Panel Report prepared at the request of The Royal Society of Canada (with eight other experts) (June). (3013)

Draft Inception Report, Shanxi Air Quality Development Project, 2001 (with Morgenstern, Zhang, others) submitted to the Asian Development Bank (June). (3953)

"Best Things First: Setting Solutions-Based Priorities and EPA," RFF Discussion Paper (with Peter Nelson and J. Clarence Davies)

Cost-Effective NOx Control in the Eastern United States, RFF Discussion Paper DP-00-18 (with Virginia McConnell, 2000 (submitted to *JEEM*)

"RAINS-ASIA: A Critique and Guide to Future Research," (with Dallas Burtraw) Technical Paper for the World Bank, November 3, 1999

"Summary of the Science of Acidification in the Adirondack Park," (with Joe Cook, Anthony Paul, Terrell Stoessell, and Dallas Burtraw) 2000.

Location Efficiency and Mortgage Default, RFF Discussion Paper DP-99-49REV (with Allen Blackman) 2000.

Cost-Effective Pollution Control With Joint Benefits: NOx Emissions and the Chesapeake Bay, to be submitted to *Water Resources Research* (with Virginia McConnell) 2000.

Mortality Risk Valuation: Survey Approach, Alan Krupnick, Maureen Cropper, Bernie O'Brian, Ronald Goree, Nathalie Simon, Liz Futo, Martin Heintzelman for Health Canada, Ontario, Canada, March 31, 1999.

"The Benefits of Air Pollutant Emissions Reductions in Maryland: Results from the Maryland Externalities Screening and Valuation Model," (with David Austin, Dallas Burtraw, and Terrell Stoessell) October 1998, RFF Discussion Paper 99-05. (Submitted to *Land Economics*).

Mortality Risk Valuation and Contingent Valuation Methods: A Pilot Survey in Japan (with Kenshi Itaoka, Okubo Satomi, Takashi Fujii, Makoto Akai, Noboru Nomura, Alan Krupnick, and Nathalie Simon (in English and Japanese) June 1998.

"The Chesapeake Bay and NOx Control: A Policy Analysis," (with Ginny McConnell, David Austin, Matt Cannon, Terrell Stoessell, and Brian Morton) prepared for the U.S. EPA and the Chesapeake Bay Program, June 1998. RFF Discussion Paper 98-46

"Evaluation of CMAQ Projects," (with Farrell and Harrington) RFF Discussion Paper 98-18.

"Intel's XL Permit: A Framework for Evaluation," (with James Boyd and Janice Mazurek) RFF Discussion Paper 98-11

"Public Support for Congestion Fee Policies for Motor Vehicles: Survey Results," working paper (with Winston Harrington and Anna Alberini) RFF Discussion Paper 98-27.

"Energy, Transportation and Environment: Policy Options for Environmental Improvements," (with Winston Harrington) paper for the World Bank.

“Mobile Sources and Air Pollution Policy: International Experience and Recommendations for Bogota, Colombia,” (with Virginia McConnell and Eduardo Uribe Utero).

“Examining the Relationships Between Urban Density, Transit Availability, and Vehicle Travel: Results from a Nested Logit Model of Vehicle Choice,” (with Winston Harrington and Margaret Walls) Paper presented at the Australian Economics Association, September 1998.

“The Competitive Implications of Facility-specific Environmental Agreements: The Intel Corporation’s Project XL,” (with James Boyd and Janice Mazurek) submitted for inclusion in *Environmental Regulation and Market Structure*, Edward Elgar.

Health and Environmental Impacts assessment Panel Report, Sulphur in Fuels Study. For the Government Working Group, chaired by Environment Canada.

“The Economics of Environmental Health Improvements: Background Document,” for the World Health Organization, June 15, 1997

“Cost-Benefit Analysis and Regulatory Reform: An Assessment of the Science and the Art,” (with Raymond Kopp and Michael A. Toman) in *Risk Assessment and Risk Management in Regulatory Decision-Making*, the Presidential Commission on Risk Assessment and Risk Management, Washington, DC, June 1997.

“The Health Benefits of Reducing Ozone and Particulate Matter Concentrations in the Dallas-Fort Worth Area,” (with Deirdre Farrell) prepared for the Environmental Defense Fund, Austin, TX, June 2, 1997.

“Summary of the Literature Review on Environmental Externalities from Electricity Generation in Maryland,” (with Gar Ragland, David Austin, Dallas Burtraw, Deirdre Farrell, and Erin Mansur) prepared for the Maryland Power Plant Research Program, State of Maryland, Annapolis, MD, January 1997.

“Public Support for Congestion and Pollution Fee Policies for Motor Vehicles: Survey Results,” (with Winston Harrington) Report to REACH (**R**educe **E**missions **A**nd **C**ongestion on **H**ighways) Task Force, Southern California Association of Governments, October 1996.

“Air Quality and Episodes of Acute Respiratory Illness in Taiwan Cities: Evidence from Survey Data,” (with Anna Alberini) Department of Economics, University of Colorado Discussion Paper 96-30; submitted to *Journal of Urban Economics*, October 1996.

“Six Steps to a Healthier Ozone Policy,” (with Deirdre Farrell) RFF Discussion Paper 96-2.

“Environment and Transportation Issues in Bangkok, Thailand,” for Asia Division, World Bank. 1995.

“Benefit-Cost Analysis and Nuclear Waste Site Cleanups: The Historical and Ethical Context,” (with Allen Kneese) RFF Discussion Paper 95-22, 1995.

Social Costing of Electricity in Maryland: Implications for Electricity Supply Energy Demand and Air Emissions, report to the Maryland Department of Natural Resources Power Plant Research Program (September 1994) (with Hadi Dowlatabadi and Stuart Siegel).

"An Analysis of Alternative Approaches to Implementing Social Costing of Electricity in Maryland," (with Hadi Dowlatabadi, Karen Palmer, and Stuart Siegel) RFF Discussion Paper 94-39, July 1994.

"Estimating the Demand for Vehicle-Miles-Traveled Using Household Survey Data: Results from the 1990 Nationwide Personal transportation Survey," (with Margaret Walls and Carter Hood) RFF Discussion Paper ENR 93-25, September 1993.

"The Distributional and Environmental Implications of an Increase in the Federal Gasoline Tax," (with Margaret Walls) RFF Discussion Paper ENR93-24, September 1993.

"The External Costs of Nuclear Power: Ex Ante Damages and Lay Risks," (with Anil Markandya and Eric Nickell) RFF Discussion Paper QE93-28, September 1993.

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