

## CURRICULUM VITAE

Aprill 2021

### **VIRGINIA D. MCCONNELL**

#### **Current Professional Positions:**

Senior Fellow, Resources for the Future, Washington, D.C.  
Professor, Department of Economics, UMBC, emeritus

#### **Areas of Specialization:**

Environmental policy, transportation, land use

#### **Previous Experience:**

Resources for the Future, Washington, D.C.  
Senior Fellow, 1999 to present  
Visiting Scholar, 1992 – 1998, Gilbert White Research Fellowship,  
1991-1992  
Economics Department, UMBC  
Associate Professor since 1989, Full Professor since 1995

#### **Education**

Ph.D. in Economics, University of Maryland, 1978  
fields in urban and environmental economics  
B.A. in Economics, Smith College, 1969

#### **Publications**

##### ***Journal Articles:***

Virginia McConnell and Benjamin Leard, Pushing New Technology into the Market:  
California's Zero Emission Vehicle Mandate, *Review of Environmental Economics and  
Policy*, published online ahead of print, March 17, 2021.

Joshua Linn and Virginia McConnell. 2019. Interactions Between Federal and State  
Policies for Reducing Vehicle Emissions, *Energy Policy*, vol. 126 (March): pg 507-517.  
RFF discussion paper version can be found at:  
<http://www.rff.org/research/publications/role-state-policies-under-federal-light-duty-vehicle-greenhouse-gas-emissions>

Benjamin Leard, Virginia McConnell and Yichen Christy Zhou. The Effect of Fuel Price Changes on Fleet Demand for New Vehicle Fuel Economy, *Journal of Industrial Economics*, forthcoming. RFF discussion paper version can be found: <http://www.rff.org/research/publications/effect-fuel-price-changes-fleet-demand-new-vehicle-fuel-economy>

Antonio M. Bento, Kenneth Gillingham, Mark R. Jacobsen, Christopher R. Knittel, Benjamin Leard, Joshua Linn, Virginia McConnell, David Rapson, James M. Sallee, Arthur A. van Benthem, Kate S. Whitefoot. 2018. Flawed analyses of the US auto fuel economy standards. *Science*. Policy Forum. December 7. Vol. 362 (6419). <https://outlook.office.com/owa/?path=/attachmentlightbox>

Margaret Wall, Nicholas Magliocca and Virginia McConnell. 2018. Modeling Coastal Land Housing Markets: Understanding the Competing Influences of Amenities and Storm Risks. *Ocean and Coastal Management*. 157(1). Pgs. 95-110.

Joshua Linn, Virginia McConnell and Benjamin Leard. 2018. How Do Low Gas Prices Affect Costs and Benefits of U.S. New Vehicle Fuel Economy Standards? *Economics of Energy and Environmental Policy*. 7(2). Earlier version as RFF Issue Brief PB 16-12. <http://www.rff.org/research/publications/how-do-low-gas-prices-affect-costs-and-benefits-us-new-vehicle-fuel-economy>

Benjamin Leard, Joshua Linn and Virginia McConnell. 2017. Fuel Prices, New Vehicle Fuel Economy, and Implications for Attribute-Based Standards. *Journal of the Association of Environmental and Resource Economists (JAERE)*, vol. 4(3), pgs: 659-700.

Version of this paper is RFF Discussion Paper, DP 16-04.

<http://www.rff.org/research/publications/fuel-prices-new-vehicle-fuel-economy-and-implications-attribute-based>

Benjamin Leard and Virginia McConnell. 2017. New Markets for Pollution and Energy Efficiency: Credit Trading under Automobile Greenhouse Gas and Fuel Economy Standards. *Review of Environmental Economics and Policy*, 11(2), pgs 207-226.

As RFF discussion paper, DP-15-16-REV.

<http://www.rff.org/research/publications/new-markets-credit-trading-under-us-automobile-greenhouse-gas-and-fuel-economy>

Nicholas Magliocca, Virginia McConnell, Margaret Walls. 2015. Exploring Sprawl: Results from an Economic Agent-Based Model of Land and Housing Markets, *Ecological Economics*, Volume 113, May Pgs 114-125.

- Nicholas R. Magliocca, Daniel G. Brown, Virginia D. McConnell, Joan I. Nassauer, Elizabeth Westbrook. 2013. Effects of alternative developer decision-making models on the production of ecological subdivision designs: Experimental results from an agent-based model. *Environment and Planning B* 41: 907 – 927.
- Matthias Cinyabuguma and Virginia McConnell, 2013. Urban Growth Externalities and Neighborhood Incentives: Another Cause of Urban Sprawl? *Journal of Regional Science*: 53(2): pg 332-346.
- Nicholas Magliocca, Virginia McConnell, Margaret Walls, and Elena Safirova. 2012. Zoning on the Urban Fringe: Impacts on Land Prices, House Prices, and Spatial Patterns of Development, *Regional Science and Urban Economics*, vol. 42. Pgs. 198-210. January.
- Elizabeth Kopits, Virginia McConnell and Daniel Miles. 2012. Lot size, Zoning and Household Preferences: Impediments to Smart Growth? *Housing Policy Debate* 22:2, pgs. 153-174.
- Nicholas Magliocca, Elena Safirova, Virginia McConnell and Margaret Walls. 2011. An Agent-Based Model of Coupled Housing and Land Markets, *Computers, Environment and Urban Systems*, 35(3): 183-191, May.
- Virginia McConnell and Margaret Walls, “Policy Monitor: U.S. Experience with Transferable Development Rights,” *Review of Environmental Economics and Policy*, Summer 2009.
- Elizabeth Kopits, Virginia McConnell, and Margaret Walls. 2008. “The Tradeoff Between Private Lots and Public Open Space in Subdivisions at the Urban-Rural Fringe,” *Regulation*, CATO Institute, Washington, D.C. May 2008.
- Elizabeth Kopits, Virginia McConnell and Margaret Walls, 2008. “Making Markets for Development Rights Work: What Determines Demand?” *Land Economics*, February 84(1): 1-16.
- Elizabeth Kopits, Virginia McConnell, and Margaret Walls. 2007. “The Tradeoff Between Private Lots and Public Open Space in Subdivisions at the Urban-Rural Fringe,” with. Published in Proceedings of the Annual meeting of the AAEA, *American Journal of Agricultural Economics*, 2007 89(5): 1191-1197.

- Virginia McConnell, Elizabeth Kopits and Margaret Walls, 2006. "How Well Can Markets for Development Rights Work? Evaluating a Farmland Preservation Program", *Journal of Environment and Planning*, 49(5):631-652.
- Virginia McConnell, Margaret Walls, and Elizabeth Kopits, 2006. "Zoning, TDRs, and the Density of Development," *Journal of Urban Economics* 59: 440-457.
- Virginia McConnell, Elizabeth Kopits, and Margaret Walls. 2005. "Farmland Preservation and Residential Density: Can Development Rights Markets Effect Land Use Change?" *Agricultural and Resource Economics Review*, 34/2 October: 131-144.
- Harrington, Winston and Virginia McConnell. 2003. Options for a Lighter Tread: Policy and Technology Options for Motor Vehicles. *Environment*. 45 (9), November: 21-38.
- Boyd, James, Dallas Burtraw, Alan Krupnick, Virginia McConnell, Richard G. Newell, Karen Palmer, James Sanchirico, and Margaret Walls. 2003. Trading Cases: Is trading credits in created markets a better way to reduce pollution and protect natural and protect natural resources? *Environmental Science and Technology* vol. 37 (11) June:217-223.
- Ando, Amy, Virginia McConnell and Winston Harrington. 2000. "Costs, Emission Reductions and Vehicle Repair: Evidence from Arizona," *Journal of Air and Waste Management Association* 50 April: 509-521.
- Amy Ando, Winston Harrington and Virginia McConnell. 1999. "Estimating Full IM240 Emissions from Partial Test Results: Evidence from Arizona," *Journal of the Air and Waste Management Association*, v 49: 1153-1167.
- Harrington, Winston, Virginia McConnell, and Amy Ando. 2000. "Are Vehicle Emission Inspection Programs Living Up to Expectations?" *Transportation Research Part D* 5.
- Anna Alberini, Winston Harrington and Virginia McConnell. 1996. "Estimating an Emissions Supply Function from Accelerated Vehicle Retirement Programs," *Review of Economics and Statistics*, v. 78 No.2: 251-265.
- Anna Alberini, Winston Harrington, and Virginia McConnell. 1995. "Determinants of Participation in Accelerated Vehicle Retirement Programs," *The Rand Journal of Economics*, Vol. 26, No. 1, Spring.
- Winston Harrington, Margaret Walls and Virginia D. McConnell. 1995. "Driving Our Way to Cleaner Air," *Issues in Science and Technology*, Winter.

- Winston Harrington and Virginia McConnell. 1994. "Modeling In-Use Vehicle Emissions and the Effects of Inspection and Maintenance Programs," *Journal of Air and Waste Management Association*, Vol. 44, No.6, June: 794-799.
- Gregory E. Schwarz and Virginia D. McConnell. 1993. "Local Choice and Wastewater Treatment Plant Performance," *Water Resources Research*., Vol. 29, No. 6, June: 1589-1600.
- Virginia McConnell and Gregory Schwarz. 1992. "The Supply and Demand for Pollution Control: Evidence from Wastewater Treatment," *Journal of Environmental Economics and Management*, Vol. 23, June: 54-77.
- Virginia McConnell and Robert Schwab. 1990. "The Impact of Environmental Regulations on Industry Location Decisions: The Motor Vehicle Industry," *Land Economics*, Vol. 66, No. 1, February: 67-81.
- Anthony Barbera and Virginia McConnell. 1990. "The Impact of Environmental Regulations on Industry Productivity: Direct and Indirect Effects," *Journal of Environmental Economics and Management*, Vol. 18, January: 50-65.
- Virginia D. McConnell, "Costs and Benefits of Vehicle Emission Inspection: A Case Study of the Maryland Region." 1990. *Journal of Environmental Management*, Vol. 30, Winter: 1-15.
- Virginia D. McConnell, John H. Cumberland and Patrice Gordon. 1988. "Regional Marginal Costs and Economies of Scale in Municipal Waste Treatment: An Application to the Chesapeake Bay, *Growth and Change*, Vol. 19, No. 4, Fall: 113.
- Anthony J. Barbera and Virginia D. McConnell. 1987. "Effects of Pollution Control on Industry Productivity," *Journal of Industrial Economics*, Vol. 35, No. 2, January: 161-172.
- Virginia McConnell. 1986. "Automobile Use and Locational Interdependencies." *Journal of Regional Science*, Vol.26, No.3: 475-498.
- Virginia D. McConnell and Mahlon Straszheim. 1982. "Auto Pollution and Congestion in an Urban Model: An Analysis of Alternative Strategies", *Journal of Urban Economics*, Volume 11, January: 113-1.

### ***Other Publications, Papers and Reports:***

Virginia McConnell and Benjamin Leard. 2020. The progress and potential of EVs to reduce carbon emissions. RFF Report 20-16. December 8.  
<https://www.rff.org/publications/reports/potential-role-and-impact-evs-us-decarbonization-strategies/>

Benjamin Leard and Virginia McConnell. 2020. Interpreting Tradable Credit Prices in Overlapping Vehicle Regulations, RFF working paper 20-07, and under review at *Journal of Environmental Economics and Management*.  
<https://www.rff.org/publications/working-papers/interpreting-tradable-credit-prices-overlapping-vehicle-regulations/>

Virginia McConnell, Benjamin Leard and Fred Kardos. 2019. California's Evolving Zero Emission Vehicle Program, RFF Working Paper 19-22. November.  
[https://media.rff.org/documents/RFF\\_WP\\_Californias\\_Evolving\\_Zero\\_Emission\\_Vehicle\\_Program.pdf](https://media.rff.org/documents/RFF_WP_Californias_Evolving_Zero_Emission_Vehicle_Program.pdf)

Josh Linn, Benjamin Leard, Alan Krupnick, and Virginia McConnell. 2018. Comments to NHTSA and US EPA on the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026: Passenger Cars and Light Trucks.  
[http://www.rff.org/files/document/file/Comments\\_10-25-18\\_EPA-NHTSA\\_final.pdf](http://www.rff.org/files/document/file/Comments_10-25-18_EPA-NHTSA_final.pdf)

Benjamin Leard, Virginia McConnell, and Yichen Christy Zhou. 2018. Fleet Vehicles and US Fuel Economy: How Do Fuel Prices Affect Vehicle Purchase Decisions for Big Buyers? *Resources*, Issue 197. Spring.  
<http://www.rff.org/research/publications/fleet-vehicles-and-us-fuel-economy-how-do-fuel-prices-affect-vehicle-purchase>

Joshua Linn and Virginia McConnell. 2017. Designing Policies to Complement Federal Standards for Vehicle GHG Emissions. *Resources*, Issue 195. Fall  
<http://www.rff.org/research/publications/designing-state-policies-complement-us-federal-standards-vehicle-ghg-emissions>

Benjamin Leard, Josh Linn, and Virginia McConnell. 2016. Do Low Oil Prices Undermine US Passenger Vehicle Fuel Economy Standards? *RFF Policy Brief*.  
<http://www.rff.org/research/publications/do-low-oil-prices-undermine-us-passenger-vehicle-fuel-economy-standards>

*Cost, Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles*, 2015. Final Report of Committee on the Assessment of Technologies for Improving Fuel Economy of Light-Duty Vehicles, Phase 2; Board on Energy and Environmental System; Division on Engineering and Physical Sciences; National Research Council, Washington, D.C. I was a member of the committee and an author of this study.

Benjamin Leard, Josh Linn, and Virginia McConnell. 2015. Fuel Costs, Economic Activity, and the Rebound Effect for Heavy-Duty Trucks, RFF Discussion Paper, DP 15-43-REV.

Benjamin Leard and Virginia McConnell. 2015. New Markets under US Vehicle Fuel Efficiency and Greenhouse Gas Standards: Credit Trading, *Resources*, September 24.

Alan Krupnick, Virginia McConnell and William Raich. "Financing Highway Infrastructure: Overview of the Issues and Policy Solutions."

Alan Krupnick, Josh Linn and Virginia McConnell. 2014. "Preparing for the Midterm Review of the Fuel Economy and Greenhouse Gas Emissions Rate Standards for Light Duty Vehicles", *Resources*, Fall.  
<http://www.rff.org/research/publications/preparing-midterm-cafe-review>

Josh Linn and Virginia McConnell. 2013. "How Electric Cars can Increase Greenhouse Gases" *Resources* (184).  
<http://www.rff.org/research/publications/how-electric-cars-can-increase-greenhouse-gas-emissions>

"The New CAFE Standards: Are they Enough on Their Own?" RFF Discussion paper 13-14. Washington, D.C. May 2013.  
<http://www.rff.org/Publications/Pages/PublicationDetails.aspx?PublicationID=22180>

*Transitions to Alternative Vehicles and Fuels*. 2013. Report of the Committee on Transitions to Alternative Vehicles and Fuels, Board on Energy and Environmental Systems, National Research Council. National Academies Press, Washington, D.C. Member of Committee and Co-author.

*Policy Options for Reducing Energy Use and Greenhouse Gas Emissions from U.S. Transportation, 2011*. Committee for a Study of Potential Energy Savings and

Greenhouse Gas Reductions from Transportation. Transportation Research Board, Special Report 307. Member of Committee and co-author of study.

*Plug-In Electric Vehicles: Hype or Reality? Report of an Expert Panel.* January 2011. Member, Transportation Electrification Panel.

*Should Hybrid Vehicles be Subsidized?*, with Tom Turrentine. 2010. Backgrounder paper for RFF-NEPI Project: *Toward a National Energy Project: Assessing the Options.* Resources for the Future.

Measuring Residential Energy Consumption: Engineering versus Actual Energy Savings. With Rob Neff and Danielle Schwartzmann, draft manuscript, October 2009.

Transfer of Development Rights in U.S. Communities. Co-authored with Margaret Walls. RFF Report, September 2007. 135 pages.

Margaret Walls and Virginia McConnell. 2007. *Transfer of Development Rights in U.S. Communities: Evaluating Program Design, Implementation and Outcomes*, Bound Report, Resources for the Future.  
Also available on the [http://www.farmlandinfo.org/farmland\\_preservation\\_literature/](http://www.farmlandinfo.org/farmland_preservation_literature/)

Virginia McConnell. 2006. "Should States be Allowed to Set Emissions Standards for Mobile Sources of Pollution?" *Resources*, Washington, D.C. Fall: 4.

*State Practices for Setting Environmental Standards.* National Academy of Sciences, National Research Council, Board on Environmental Studies and Toxicology, Co-author and member of Review Panel State Practices for Setting Environmental Standards. April 2006.

Virginia McConnell and Margaret Walls. "The Value of Open Space: Evidence from Studies of Non-Market Benefits", Working paper, Lincoln Institute for Land Policy, <http://www.rff.org/rff/Documents/RFF-REPORT-Open%20Spaces.pdf> and RFF Report, January 2005.  
<http://www.rff.org/rff/Documents/RFF-REPORT-Open%20Spaces.pdf>

Margaret Walls and Virginia McConnell. 2003. "Incentive Based Land Use Policies and Water Quality in the Chesapeake Bay," Issue Paper for National Oceanographic and Atmospheric Administration and RFF Discussion Paper, December.



Elizabeth Kopits, Virginia McConnell and Margaret Walls. 2003. "Using Markets to Preserve Farms and Open Space," *Resources*, Resources for the Future, Washington, D.C. June.

Review of the Colorado AIR program, with Alison Pollack of Environ Corporation, Tom Wenzel of Lawrence Berkeley Labs, and Joel Schwartz, of the Reason Foundation. May 2003.

Winston Harrington and Virginia McConnell, 2003. *Vehicles and the Environment*, Resources for the Future Report, Washington, D.C.

*Evaluating Vehicle Emissions Inspection and Maintenance Programs*, co-author as member of National Research Council, National Academy of Sciences, 2001.

Winston Harrington, Virginia McConnell, and Matt Cannon, "A Behavioral Analysis of EPA's Mobile Emission Factor Model," U.S. Department of Transportation, Federal Highway Administration Report, June 1998.

Winston Harrington, Margaret Walls and Virginia D. McConnell, "Use Market Forces to Reduce Auto Pollution," *Chemtech*, Vol. 25, No. 5, May, 1995.

Anna Alberini and Virginia D. McConnell, "Will Speeding the Retirement of Old Cars Improve Air Quality," *Resources*, No. 115 (Resources for the Future: Washington, D.C.), Spring 1994.

Winston Harrington and Virginia D. McConnell, "Vehicle Emissions Inspection and Maintenance: Where Do We Go From Here?" *Resources*, No. 110 (Resources for the Future: Washington, D.C.), Winter 1993.

### ***Books and Book Chapters:***

V. McConnell and K. Wiley. 2011. Infill Development: Perspectives and Evidence from Economics and Planning, in the *Oxford Handbook of Urban Economics and Planning*, Gerrit Knaap, Kieran Donaghy, and Nancy Brooks, editors. Oxford University Press.

Edited book, *Controlling Automobile Air Pollution*, co-editors Winston Harrington and Virginia McConnell. Volume is part of the series *The International Library of Environmental Economics and Policy*, Thomas Tietenberg, editor. Ashgate Publishers. 2007.

Winston Harrington and Virginia McConnell, "Vehicles and the Environment", Chapter 5 of *The International Yearbook of Environmental and Resource Economics, 2003/2004: A Survey of Current Issues*, edited by Henk Folmer and Tom Tietenberg, Edward Elgar, 2003.

Winston Harrington and Virginia McConnell, "Coase and Car Repair: Who Should Be Responsible for Emissions Of Vehicles In Use?" in *Property Rights, Economics and the Environment*, edited by Michael D. Kaplowitz, JAI Press, Stamford, Connecticut, 2000.

Anna Alberini, David Edelstein and Virginia McConnell, "Will Speeding the Retirement of Old Cars Improve Air Quality?" Wallace E. Oates, editor, *The RFF Reader in Environmental and Resource Management*, Resources for the Future, Washington, D.C. 1999.

David Austin, Alan Krupnick, Virginia McConnell, "Trans-Boundary Airshed Management as an Approach to Trans-Boundary Water Cooperation: The Case of the Chesapeake Bay," Richard Just and Sinaia Netanyahu, eds. *Conflict and Cooperation on Trans-Boundary Water Resources*, (Kluwer Academic Publishers) 1998.

Winston Harrington, Virginia McConnell and Anna Alberini, "Economic Incentive Policies under Uncertainty: The Case of Vehicle Emission Fees," in Kenneth Small and Roberto Roson, eds. *Environment and Transport in Economic Modeling* (Kluwer Academic Publishing, Amsterdam) 1998.

Winston Harrington, Virginia McConnell and Margaret Walls, "Who's in the Driver's Seat? Mobile Source Policy in the Federal System," John Braden and Stef Proost, eds., *Climate Change, Transport and Environmental Policy: Empirical Applications in a Federal System*, (Edward Elgar Publishing: London). 1998.

Winston Harrington and Virginia D. McConnell, "Cost Effectiveness of Remote Sensing of Vehicle Emissions," in *Cost Effective Control of Urban Smog* (Federal Reserve Bank of Chicago: Chicago, Illinois), November 1993.

### **Other Communications**

Blog on *Common Resources*: “Lower CO2 emissions from trucks are in the works” June 23, 2015 with Alan Krupnick and William Raich

Four part blog series on *Common Resources* on Infrastructure Finance, with Alan Krupnick and William Raich

“This Is the Time for a Long-Term Solution to Highway Funding” May 22, 2015

“How Bad is the Nation’s Transportation Infrastructure, and What are Future Spending Needs?” May 29, 2015

“Financing the Highway Trust Fund: The Case for Higher Fuel Taxes” June 10, 2015

“Alternative Policies for Financing the Highway Trust Fund” July 1, 2015

Subsidies for EVs: Good Policy or an Unnecessary Handout? With Josh Linn, July 23, 2015

<http://common-resources.org/2013/subsidies-for-evs-good-policy-or-an-unnecessary-handout/#sthash.1GJs28yP.dpuf>

Four part blog series on *Common Resources*, title: Preparing for the Midterm Review of the Fuel Economy and Greenhouse Gas Emissions Rate Standards for Light Duty Vehicles. With Alan Krupnick and Josh Linn. Spring 2014.

Five part blog series on *Common Resources*, title: Myths, Realities and Policy: Electric Vehicles, with Josh Linn. July to September, 2013.

Heard on National Public Radio, Marketplace. Commentary: We’d all benefit from higher gas prices. December 8, 2008.

<https://www.marketplace.org/2008/12/15/business/wed-all-benefit-higher-gas-prices>

Commentary for Resources for the Future Website. *Preservation and Development: Can TDRs Improve Land Markets*. With Margaret Walls. June 16, 2008.

Finding the Right Drivers for Cleaner Cars: Controlling Automobile Air Pollution. RFF web page that describes book by Harrington and McConnell. December 3, 2007.

Television interview with WSB-TV Atlanta, Georgia on vehicle emissions inspection programs and air quality. Interview in Washington, D.C. on October 9, 2007.

Telephone interview with Seth Feaster of the New York Times business section, on vehicles fuel use, and vehicle fleet turnover, May 29, 2008.

## **Public Service**

## ***To the Profession and the Community***

### ***National Academy Panels***

National Research Council, Board on Energy and Environmental Systems, *Committee to Evaluate CAFE II*, 2012 – 2015.

National Research Council, Board on Energy and Environmental Systems, *Committee on Transitions to Alternative Vehicles and Fuels*, 2010 – 2012.

Member, Transportation Research Board of the National Academies, *Committee for the Study of Potential Energy Savings and Greenhouse Gas Reductions from Transportation*, 2008-2009. This committee is looking the possible ways to reduce and costs of reduction from transportation sources over the next 30 years in the U.S.

National Academy of Sciences, Board on Environmental Studies and Toxicology, Commission on Life Sciences, *Committee to Review State Practices for Setting Environmental Standards*. 2004 – 2006.

National Academy of Sciences, Board on Environmental Studies and Toxicology, Commission on Life Sciences, *Committee to Review the Effectiveness of Vehicle Emission Inspection and Maintenance Programs*, 2000-2001. Evaluating Vehicle Emission Inspection and Maintenance Programs

Member, *The Transport Electrification Panel*, School of Public and Environmental Affairs, Indiana University, John Graham, chair. May 2010- December 2010.

Review Panel, National Cooperative Highway Research Program. Review proposals for grant: *Effects of Changing Transportation Energy Supplies and Alternative Fuel Sources on State Departments of Transportation*, Project 20-83(04). Transportation Research Board, National Academy of Sciences, 2009.

Member, EPA Science Advisory Board, Advisory Council on Clean Air Compliance Analysis. 2004-2008. Reviewed EPA's *Benefits and Costs of the Clean Air Act 1990-2020: Revised Analytical Plan for EPA's Second Prospective Analysis*, and *Estimating the Public Health Benefits of Proposed Air Pollution Regulations*.

Member of EPA Review Committee, Review of Procedures for Grant Review, Science Advisory Board, EPA. October 14-15, 2006.

Member of the EPA Science Advisory Board, Advisory Council on Clean Air Compliance Analysis. 2003 – 2007.

Member of the Adhoc Air Workgroup to Examine Voluntary Controls to Limit Ozone in the Maryland Region, Spring 2003.

Clean Air Advisory Committee, Mobile Sources Technical Advisory Subcommittee, U.S. Environmental Protection Agency, 1994-2002. Co-Chair of Mobile Source Innovative and Incentive Policies Workgroup, 1997-1999. Member of the Non-Road Diesel Vehicle Workgroup, Clean Air Advisory Committee, Mobile Sources Technical Advisory Subcommittee, USEPA, 2001.

Air Quality Subcommittee, Scientific and Technical Advisory Committee on the Chesapeake Bay, U.S. Environmental Protection Agency, Chesapeake Bay Program, 1993-2002.

Association of Environmental and Resource Economics, Contributed Papers Selection Committee for Annual Meetings, 1993-1995.

***Referee/Reviewer for:***

Review Panel, National Cooperative Highway Research Program, Review Proposals for *Effects of Changing Transportation Energy Supplies and Alternative Fuel Sources on State Departments of Transportation*, Project 20-83(04). Transportation Research Board, National Academy of Sciences, 2009.

Reviewer for National Academy of Science. *Review of Models in Environmental Regulatory Decision-Making*. January 2007.

Referee for Journals: *Energy Policy*, *Journal of Regional Science*, *Regional Science and Urban Economics*, *Brookings Institution*, *Environmental Science and Technology*, *Journal of Urban Economics*, *Journal of the Air & Waste Management Association*, *Journal of Policy Analysis and Management*, *Journal of Environmental Economics and Management*, *Review of Regional Studies*, *Land Economics*, *Marine Resource Economics*, *Water Resources Research*, *International Economic Review*, *Environment and Planning*, *Contemporary Economic Policy*.

Editorial Board , *Journal of Environmental Economics and Management*, 1996-97.