

R. SCOTT FARROW

Department of Economics
UMBC, 1000 Hilltop Circle
Baltimore, MD 21250
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EXPERIENCE

UMBC (2005-): Professor Emeritus (2019 -), Professor (2005-2019), Department of Economics (Chair, 2005-2011); Affiliate Professor-Public Policy, Faculty Fellow-Center for Urban Environmental Research and Education.

- Research risk and economic based approaches to policy evaluation
- Teach quantitative methods, welfare economics, and microeconomics

U.S. GAO (Government Accountability Office), (2002-2005): Chief Economist.

- Provide advice and assistance to the Comptroller General and senior managers
- Review and resolve economic questions across all topic areas involving 80 economists
- Led agency development with respect to risk management and economic performance

Carnegie Mellon University, H. John Heinz III School of Public Policy and Management and the Department of Engineering and Public Policy (EPP), Assistant, Associate Professor, 1982-1994; Director and Principal Research Economist, Center for the Study and Improvement of Regulation, 1998-2002; Adjunct Professor, EPP (2008-2019).

- First director of a multi-disciplinary and bi-university center (CMU and the University of Washington) focused on the study of environmental, health and safety regulation. Duties included research, fund-raising, and research management.
- Teach graduate and undergraduate classes in environmental economics and policy, econometrics, microeconomics, benefit-cost analysis, and technological change

Dames & Moore, Inc. (1994 -98): Firm associate, and Senior Economist. Developed new environmental economic practice as part of 5,000 person firm w/125 offices.

- *Services*: Prepare and critique microeconomic analyses; advise foreign Ministries of the Environment on the use of economic instruments; advise states on the use of benefit-cost analysis; litigation support or expert witness on natural resource damage and cost allocation; cost distributions of potential environmental liability, more.
- *Locations*: California, New Jersey, Pennsylvania, Ohio, Massachusetts, Maine, Czech Republic, Slovakia, Kazakhstan, Latvia, Chile, Chad, Cameroon.

Executive Office of the President of the United States (1990-1992): Assoc. Director for Pollution Control and Prevention and Ranking Senior Economist, White House Council on Environmental Quality (CEQ).

- Led CEQ's review of EPA and Department of Energy initiatives
- Senior policy advisor to the President's Commission on Environmental Quality
- Authored studies on Clean Water Act and for annual report
- Represented CEQ on the interagency development of the National Energy Strategy and inter-agency activities such as the Federal Council on Recycling and Procurement

Visiting, Fellowship, or Affiliated Positions

Department of Homeland Security, National Center for the Risk and Economic Analysis of Terrorism Events (University of Southern California), Economics Coordinator, 2014-2016; Affiliate Scholar/Senior Research Fellow, 2016-.

The Pennsylvania State University (1997-98), Department of Energy, Environmental and Mineral Economics, Visiting Associate Professor.

Woods Hole Oceanographic Institution, Marine Policy Center, Marine Policy Fellow, 1989; Senior Fellow, 1998, 2012; Guest Investigator, 1990-1997, 1999-2001, 2005-.

- Conduct research on offshore oil and gas leasing, decision-making under uncertainty, observed bureaucratic behavior and residual risk analysis

Minerals Management Service, U.S. Department of the Interior (1985-1986), Economist, (inter-personnel agreement with Carnegie Mellon University).

- Evaluated policy options for the federal management of offshore oil and gas resources
- Utilized system-wide data bases to respond to Congressional inquiries

Executive Office of the President of the United States, Office of Policy, Planning and Evaluation, Council on Wage and Price Stability (1979): Economist.

- Analyzed data for macroeconomic program evaluation and compliance

EDUCATION

Washington State University, Ph.D. (Economics), 1983; M.A. (Economics: Industrial Organization and Environmental Economics), 1981.

Whitman College, Walla Walla, Washington, 1974, B.A. *cum laude*; Honors in Economics.

BOOKS AND SOFTWARE

Farrow, S., ed., *Teaching Benefit-Cost Analysis: Tools of the Trade*, Edward Elgar, Cheltenham, 2018 (paperback, 2019).

Farrow, S. and R. Zerbe, eds., *Principles and Standards for Benefit-Cost Analysis*, Edward Elgar, Cheltenham, 2013.

Fischbeck, P. and S. Farrow, eds., *Improving Regulation: Cases in Environment, Health and Safety*, Resources for the Future Press, Washington, D.C. 2001.

Farrow, S., R. Ponce, E. Wong, et al., *FERET: The Fast Environmental Regulatory Evaluation Tool*, Version 1.0, June, 2001 (CD included *Improving Regulation*, above).

Farrow, S. with J. Broadus, T. Grigalunas, P. Hoagland III and J. Opaluch, *Managing the Outer Continental Shelf Lands: Oceans of Controversy*, Taylor and Francis, New York, 1990.

REFEREED ARTICLES

Von Winterfeldt, D., S. Farrow, R. John, J. Eyer, A. Rose and H. Rosoff, “The Value of Homeland Security Research”, *Risk Analysis*, 40(3):450-475, 2019.

Farrow, S. and A. Rose, “Welfare Economics: Bridging the Partial and General Equilibrium Gap”, *Journal of Benefit-Cost Analysis*, Spring, 2018. *JBCA* Paper of the year, 2018.

Farrow, S., “Cybersecurity: Integrating Information into the Microeconomics of the Consumer and the Firm”, *J. of Information Security*, 7:281-290, 2016.

<http://dx.doi.org/10.4236/jis.2016.75023>

Farrow, S. and J. Szanton, “Cybersecurity Investment Guidance: Extensions of the Gordon and Loeb Model”, *J. of Information Security*, 7:15-28, 2016.

Farrow, S., “Residual Risk Accounting: A Pilot Study”, *Review of Income and Wealth*, Summer, 2015.

Farrow, S., “Adding Value with Benefit-Cost Analysis: Forecasting Net Social Benefit from Impacts of Slot Machine Gambling in Maryland”, *Journal of Benefit-Cost Analysis*, Summer, 2015.

Farrow, S. and J. Costa., “Slot Machine Payback Percentages: The Devil is in the Moment”, *Journal of Gambling Business and Economics*, 8(2):55-71, 2014.

Farrow, S., “How (Not) to Lie with Benefit-Cost Analysis”, *Economists’ Voice*, December, 10(1):45-50, 2013.

Farrow, S. and M. Scott, “Comparing multi-state expected damages, option price and cumulative prospect measures for valuing flood protection”, *Water Resources Research*, 49(5):2638-2648, 2013.

Farrow, S. and D. Larson, “News and Social Costs: The Case of Oil Spills and Distant Viewers,” *Journal of Benefit-Cost Analysis*, 3(4):#4, pp. 1-22, 2012.

Farrow, S., “A Missing Error Term in Benefit-Cost Analysis,” *Environmental Science and Technology*, 46(5):2523-2528, 2012.

Farrow, S. and W. K. Viscusi, “Principles and Standards for the Benefit-Cost Analysis of Safety,” *Journal of Benefit-Cost Analysis*, 2(3):#5, 2011, available at www.bepress.com/jbca .

Farrow, S., “Incorporating Equity in Regulatory and Benefit-Cost Analysis Using Risk Based Preferences,” *Risk Analysis*, 31(6):902-907, 2011, available at <http://onlinelibrary.wiley.com/doi/10.1111/risk.2011.31.issue-6/issuetoc> .

REFEREED ARTICLES: continued

Haveman, R. and S. Farrow, "Benefit-Cost Accounting for Labor in Times of High Unemployment," *Journal of Benefit-Cost Analysis*, 2(2):#7, 2011, available at www.bepress.com/jbca.

Farrow, S. and S. Shapiro, "The Benefit-Cost Analysis of Homeland Security Expenditures," *J. of Homeland Security and Emergency Management*, 6(1):1-20, 2009, available at <http://www.bepress.com/jhsem/vol6/iss1/25/>.

Bray, C., S. Farrow and T. Guinane, "Microeconomic Performance: Uses, Gaps, and Opportunities in Government Program Evaluation," *Research in Law and Economics*, Elsevier, Amsterdam, 2007.

Farrow, S., "The Economics of Homeland Security Expenditures: Foundational Expected Cost-Effectiveness Approaches," *Contemporary Economic Policy*, January, pp. 14-26, 2007, available at <http://onlinelibrary.wiley.com/doi/10.1111/j.1465-7287.2006.00029.x/abstract>.

Schultz, M., M. Small, P. Fischbeck, and S. Farrow, "Evaluating Response Surface Designs for Uncertainty Analysis and Prescriptive Applications of a Large-scale Water Quality Model," *Environmental Modeling and Assessment*, 11(4):345-359, 2006.

Farrow, S., M. Schultz, P. Cellikol, and G. VanHoutven, "'Pollution Trading in Water Quality Limited Areas: Use of Benefits Assessment and Cost-Effective Trading Ratios," *Land Economics*, 81(2) May, 2005.

Brown, M., G. Morgan, and S. Farrow, "Expert Assessment of the Performance of the U.S. System for Environmental Regulation," *Journal of Risk Research*, 7(5):507-521, July, 2004.

Farrow, S., "Merging Risk Assessment, Benefit-Cost Analysis, and Real Options: A Quantitative Approach to the Precautionary Principle," *Risk Analysis*, 24(3):729-737, 2004. Reprinted in *Applied Benefit-Cost Analysis*, ed. A. Schmitz, R. Zerbe, Edward Elgar, 2008

Schultz, M., M. Small, S. Farrow, and P. Fischbeck, "State Water Pollution Control Policy Insights from a Reduced Form Model," *Journal of Water Resources Planning and Management*, 130(2):150-159, March/April 2004.

Wong, E., J. Gohlke, W. Griffith, S. Farrow, and E. Faustman, "Assessing the Health Benefits of Air Pollution Reduction for Children," *Environmental Health Perspectives*, 112 (2):226-232, February, 2004.

Wong, E., R. Ponce, et al., "Comparative Risk and Policy Analysis in Environmental Health," *Risk Analysis*, 23(6):1337-1349, December, 2003.

Dekay, M., et al., "Risk-Based Decision Analysis in Support of Precautionary Policies," *Journal of Risk Research*, 5(4):391-417, 2002.

REFEREED ARTICLES: continued

Farrow, S. and H. Hayakawa, " Investing in Safety: An Analytical Precautionary Principle," *Journal of Safety Research*, 33(August):165-174, 2002.

Farrow, S., and B. Morel, "Continuation Rights, Options, and the Precautionary Principle," *Risk, Decision, and Policy*, 6:145-155, 2001.

Farrow, S., "The Duality of Taxes and Tradable Permits: A Survey with Applications to Central and Eastern Europe," *Environment and Development Economics*, 4(Oct):519-535, 1999.

Farrow, S. and M. Toman, "Using Environmental Benefit-Cost Analysis to Improve Government Performance," reprinted in *Applied Benefit-Cost Analysis*, ed. A. Schmitz, R. Zerbe, Edward Elgar Publishing, 2008 from *Environment* 41(2):12-15,33-37 (March) 1999.

Farrow, S., "Environmental Equity and Sustainability: Rejecting the Kaldor-Hicks Criteria," *Ecological Economics*, 27(2):183-188, 1998.

Kite-Powell, H., DiJin and S. Farrow, "Expected Safety Benefits of Electronic Charts and Integrated Navigation Systems," *J. of Transport. Economics and Policy*, May, 1997, p. 147-162.

Farrow, S, "Marine Protected Areas: Emerging Economics", *Marine Policy*, 20(6):439-446,1996.

Farrow, S., "The Dual Political Economy of Taxes and Tradable Permits," *Economics Letters*, August, 1995.

Farrow, S., "Extinction and Market Forces: Two Case Studies," *Ecological Economics*, 13:115-123, June, 1995.

Lyon, R. and S. Farrow, "An Economic Analysis of Clean Water Act Issues," *Water Resources Research*, 31(1):213-223, January, 1995.

Farrow, S. and M. Rose, "Public Information Externalities: Estimates from Offshore Energy Exploration," *Marine Resource Economics*, 7:2 (Summer, 1992), pp. 67-82.

Farrow, S. and J. Krautkraemer, "Economic Indicators of Resource Scarcity: Comment," *Journal of Environmental Economics and Management*, September, 1991. p. 190-194.

Farrow, S., "Does Analysis Matter? Economics and Planning in the Department of the Interior," *The Review of Economics and Statistics*, February, 1991. p. 172-176.

Farrow, S. and J. Krautkraemer, "Extraction at the Intensive Margin: Metal Supply and Grade Selection Response to Anticipated and Unanticipated Price Changes," *Resources and Energy*, March, 1989. p. 1-21.

Farrow, S., "Does Areawide Offshore Leasing Decrease Bonus Revenues?", *Resources Policy*, December, 1987. p. 28-36.

REFEREED ARTICLES: continued

Farrow, S., "Lease Delay Rights: Market Valued Permits and Offshore Leasing," *Resources Policy*, June, 1987. p. 113-122.

Farrow, S., "Flexible Manufacturing: Market Structure and Market Failure," *Journal of Policy Analysis and Management*, Summer, 1985. p. 583-587.

Farrow, S., "Testing the Efficiency of Extraction from a Stock Resource," *Journal of Political Economy*, June, 1985. p. 452-487.

CHAPTERS IN BOOKS AND MAJOR REPORTS

Farrow, S., "Simulation" in *Teaching Benefit-Cost Analysis: Tools of the Trade*, ed. S. Farrow, Edward Elgar, Cheltenham, 2018.

Farrow, S., "Risk Informed Benefit-Cost Analysis", in *Improving Homeland Security Decisions*, A. Abbas and D. VonWinterfeldt, eds. Cambridge University Press, 2017.

Farrow, S., "A Comparison of Key Benefit Estimation Issues for Natural Hazards and Terrorism: *Ex ante /ex post* Valuation and Endogenous Risk," *Benefit-Cost Analyses for Security Policies*, ed. V. Kerry Smith and Carol Mansfield, Edward Elgar, Cheltenham, 2015.

Farrow, S. and C. Carter, "The Benefits and Costs of Slot Machine Gambling", *Oxford Economic Handbook on Gambling*, ed. Leighton Vaughan Williams and Don Siegel, 2013.

Farrow, S., "Improving the Cooling Water Intake Structure Regulatory Impact Analysis: What an Economist Wants," chapter 9 in L. Heinzerling, R. Morgenstern, W. Harrington (eds), *Improving Regulatory Impact Analysis*, Resources for the Future, Washington, D.C., 2009.

Farrow, S., "Improving the Regulatory Process Throughout its Life Cycle: Nine Recommendations to a New Administration," in *21st Century Regulation: Discovering Better Solutions for Enduring Problems*, Mercatus Center, George Mason University, 2009.

Valverde, J. and S. Farrow, "Federal Decision Making for Homeland Security," in I. Linkov, E. Ferguson, V.S. Magar (eds.), *Real-Time and Deliberative Decision Making for Homeland Security*, Springer, Netherlands, 2008.

Morel, B., S. Farrow., F. Wu, and E. Casman, "Pesticide Resistance, The Precautionary Principle, and the Regulation of Bt Corn" Chapter 8 in *The Economics of Resistance*, ed. R. Laxminaryan, Resources for the Future Press, pp. 184-213, 2003.

Farrow, S., R. Ponce, E. Wong, et. al. "Facilitating Regulatory Design and Stakeholder Participation: The FERET Template with an Application to the Clean Air Act" in *Improving Regulation: Cases in Environment, Health and Safety*, S. Farrow and P. Fischbeck, eds., Resources for the Future Press, Washington, D.C. 2001.

CHAPTERS IN BOOKS AND MAJOR REPORTS: continued

Vincent, J. and S. Farrow, "Implementation Practice and Policy Design," in *Environmental Policies and Economics in Transition Economies*, ed. R. Bluffstone and B. Larson, Edward Elgar, England, 1997.

Hoagland, P. and S. Farrow, "Planning vs. Reality: Political and Scientific Determinants of Outer Continental Shelf Lease Sales," in *The Political Economy of Environmental Policy*, ed. R. Congleton, University of Michigan Press, 1996.

Farrow, S., "Economics," in *The President's 22nd Annual Report on Environmental Quality*, Council on Environmental Quality, April, 1992.

Farrow, S., L. Campbell, A. Carlan and G. Kamens, "Economics" in *The United States of American National Report: United Nations Conference on Environment and Development*, The Council on Environmental Quality, March, 1992, p. 90-118.

Farrow, S., "Making the Environment Count," in *The President's 21st Annual Report on Environmental Quality*, The Council on Environmental Quality, April, 1991; see also, "Making the Environment Count," Hearings of the Joint Economic Committee of the U.S., chair A. Gore, S. Hrg. 102-412, Sept. 16/ Oct. 9, 1991, U.S. GPO, Washington, D.C.

PROCEEDINGS, ENCYCLOPEDIA ENTRIES, GENERAL INTEREST, REVIEWS, OP-ED PUBLICATIONS, COMMENTS, AND CONSULTING REPORTS

Farrow, S., "Review of *Applied Welfare Economics* by Massimo Florio", *Regional Studies*, 2014.

Farrow, S., "Welfare and Equity" in *Environmental and Natural Resource Economics: An Encyclopedia*, ed. T. Haab and J. Whitehead. Greenwood Press, Oxford, England, 2014.

Farrow, S., "The Uncertain Value of Reducing Uncertainty", comment, in *Value of Information: Methodological Frontiers and New Applications in Environment and Health*, ed. M. Macauley and R. Laxminaryan, Springer, 2012.

Farrow, S., "Introduction to the Inaugural Issue" *Journal of Benefit-Cost Analysis*, 1(1):1, July, 2010. Accessible at <http://www.bepress.com/jbca/>.

Hoagland, P., U.R. Sumaila and S. Farrow. 2010. "Marine Protected Areas." In Hoagland, P., ed., *Marine Policy and Economics*, derived from J.H. Steele, S.A. Thorpe and K.K. Turekian, eds., *Encyclopedia of Ocean Sciences*. London: Academic Press, pp. 1654-1659, 2001.

Shinogle, J., R. Carpenter, S. Farrow and D. Norris, "An Analysis of the Impact of Introducing Video Lottery Terminals in Maryland", December, 2008. Maryland Institute for Policy Analysis and Research.

Farrow, S., "Economics at the GAO," *Contemporary Economic Policy*, 25(1):1-2, January, 2007.

PROCEEDINGS AND OTHER REPORTS: continued

US Government Accountability Office (GAO), 2002-2005: contributor to numerous studies including those related to: 1) homeland security and risk management, 2) impacts of mergers in the oil industry, 3) gender differences in wages, 4) economic performance, 5) benefit-cost analysis for transportation investments, 6) cost simulation applications.

Farrow, S. and U. R. Sumaila, "The "New" Emerging Economics of Marine Protected Areas," *Fish and Fisheries*, 2002, (3): 356-359.

M. Small, S. Farrow, and C. Goldberg, "Economic Valuation of the Environment: A Special Issue," *Environmental Science and Technology*, April 15, 2000, p. 1381-1383.

Farrow, S., "The Economics of Public Health," in *McMillan Encyclopedia of Public Health*, ed. Lester Breslow, Macmillan Reference, Chicago, Ill. 2001.

Farrow, S. "Review: *Encountering the Past in Nature: Essays in Environmental History* edited by T. Myllyntaus and M. Saikku," *Journal of Economic History*, 2001.

Farrow, S., R. Ponce, E. Wong, et. al., "FERETing out the Costs and Health Impact of a Regulation," *Chemistry Business*, 29(2):35, 2001.

Farrow, S., "Trade and the Environment," in *The U.S. Trade Deficit: Causes, Consequences, and Recommendations for Action*, supplemental CD of documents and testimony, U.S. Trade Deficit Review Commission, November, 14, 2000.

Farrow, S., "How Little We Know About Regulation," *Environmental Forum*, 16(4):47, 1999.

Farrow, S., "Review: The Impact of Carbon Taxes on Energy Exporting Countries," *The Energy Journal*, p. 154-155, February, 1999.

Strellec, K. and S. Farrow, "Property Values and Public Revenues: Impacts of High Extraction Mining in Southwestern Pennsylvania," Dames & Moore, Audubon Society of W. PA. 1998.

Farrow, S., "Socioeconomics of Further Development" in the *California Offshore Oil and Gas Energy Resources*, (The COOGER Report); Dames & Moore for the U.S. Minerals Management Service, DRAFT: 1998 (not included in final report).

Farrow, S. and S. Menkhaus, "Economic Analysis of the Chad Export Project: Chad Portion," Dames & Moore, prepared for the Chad Export Consortium, 1998.

Farrow, S. and S. Menkhaus, "Economic Analysis of the Chad Export Project: Cameroon Portion," Dames & Moore, prepared for the Chad Export Consortium, 1998.

PROCEEDINGS AND OTHER REPORTS: continued

Farrow, S., "The Potential Contribution of Economics to Offshore Lease Abandonment," in *Proceedings: Offshore lease Abandonment and Platform Disposal Conference*, ed. A. Pulsipher, Louisiana State University Center for Energy Studies, Baton Rouge, 1997.

Farrow, S., "Adapting Tradable Permits to Existing Conditions in Transition Economies: Evidence from Central Europe and Asia," in *Environmental Policy for Economies in Transition: Lessons Learned and Future Directions*, Proceedings of the Resource Policy Consortium Symposium, ed. M. Livingston, Washington, 1996.

Farrow, S. and D. Larson, "The Trailhead of "Faint" Behavioral Trails: Television News Viewing and the Exxon Valdez," Association of Environmental and Resource Economists, *Newsletter*, Spring, 1995.

Farrow, S., "Comparing Economic and Administrative Instruments: The U.S. Experience," in *Proceedings of the Workshop on Economic Instruments for Sustainable Development*, Pruhonice, Czech Republic; Ministry of the Environment of the Czech Republic, February, 1995 (also available from the Harvard Institute for International Development, Cambridge, MA.)

Farrow, S., "The Czech Republic: Potential Cost Savings from Using Economic Instruments," prepared for the Harvard Institute of International Development and the Ministry of the Environment of the Czech Republic, March, 1995.

Margolis, J., G. Trivedi and S. Farrow, "The Feasibility of a Bubble System with Inter-Firm Trading in Almaty, Kazakhstan," prepared for the Harvard Institute of International Development and the Almaty City Department of Ecology, July, 1995.

Farrow, S. "Economics Based Air Pollution Strategy Options for Northern Bohemia," prepared for the Harvard Institute of International Development and the Ministry of the Environment of the Czech Republic, (also available in Czech), January, 1995.

Kite-Powell, Hauke, Di Jin, Scott Farrow and Peter Sassone, "Quantitative Estimation of Benefits and Costs of a Proposed Coastal Forecast System," prepared for the National Oceanic and Atmospheric Administration, National Ocean Service, 1994.

Farrow, S. "Cost Allocations for a Titanium Tetrachloride Plant in Ashtabula, Ohio," prepared for Thompson, Hine and Flory, 1994.

Farrow, S. and S. Joshi, "All Countries are Developing Countries," *Pacific and Asian Journal of Energy*, June, 1993, 3:1(33-41).

Anastasion, S., S. Farrow, et. al., "Oil Pollution Act of 1990: Offshore Oil Spills, The Tanker Business, and Regulation of Pollution Control," *Marine Tech. Society Journal*, 27(1):68-75, 1993.

PROCEEDINGS AND OTHER REPORTS: continued

Farrow, S. (Rapporteur), "Renewable and Nonrenewable Resources Workshop," *Trade and Sustainable Development*, The Rene Dubos Center for Human Environments, New York, 1993.

Farrow, S., "The Existing Basis and Potential for Damage Fees and Tradable Allowances," in *Clean Water and the American Economy Proceedings*, October 19-21, EPA Office of Water, EPA 800-R-93-001a, March 1993, p. 7-10 to 7-18.

Farrow, S., "The Cost of Hazardous Waste Regulation: Comment," in *The Costs of Environmental Regulation*, The American Council on Capital Formation, 1992, p. 24-28.

Farrow, S., "The Economics of Oil and Gas from the Ocean," in *Proceedings of the National Symposium on Marine Conservation*, The Smithsonian Museum, May, 1992.

Farrow, S., "Oil and Gas Development in the Bering Sea," in *Proceedings of the Conference on Shared Living Resources of the Bering Sea Region*, CEQ, 1991, p. 207-210.

Farrow, S., "Financial Accounting for the Minerals Management Service," *Proceedings: Eleventh Annual Gulf of Mexico Information Transfer Meeting*, OCS Study 21-0040 (November) 1990, p 9-14.

Abadines, E., et. al., *Catastrophic Oil Spills on the Great Lakes*, Department of Engineering and Public Policy Project Report, Carnegie Mellon University, reprinted by the Great Lakes International Joint Commission, 1991, pp. 143.

Flack, K., et. al., "Catastrophic Oil Spills on the Great Lakes," *Proceedings of the RCRA/Superfund Conference*, 1990, p. 416-418.

Farrow, S., "Modeling the Importance of Oceans and Estuaries," *Oceans89*, I:130-132.

Farrow, S., "Financial Accounting for the OCS Leasing Program," *Oceans89*, II:500-504.

Farrow, S., "Dolphin-free Tuna," *The New York Times*, May 22, 1989.

Raj, G. and S. Farrow, "Titanium Recycling," *Journal of the Washington Academy of Sciences*, December, 1987. p. 126-129.

Farrow, S., "Offshore Auctions, Greenpeace, and Lease Delay Rights," *Environ.*, Dec., 1986 (4).

PROFESSIONAL ACTIVITIES

External Grants

DHS/National Center for the Risk and Economic Analysis of Terrorism, 2014, 2015, 2016, 2017, 2018 (PI, \$75,000; Co-PI, \$25,000; PI of sub-contract, \$270,000)
Sloan Foundation, 2011 (PI, \$15,000)
MacArthur Foundation 2009-2013 (PI, \$200,000)
EPA Water and Watersheds 1999-2002 (Co-PI, ~\$650,000).
A. W. Mellon Foundation 1998 (Senior Personnel, ~\$200,000).
ExxonMobil Corporation 1998-2000 (Senior Personnel, ~\$600,000).
Ford Motor Co. 1998-2000 (Senior Personnel, ~\$300,000).
Anonymous Pittsburgh Foundation 1998-2001 (PI, ~\$75,000).
American Chemistry Council 1998-2001 (Senior Personnel, ~\$75,000)
Carnegie Mellon Seed Fund, 2000, (PI, ~\$40,000)
The Heinz Family Foundation, 1992 (Senior Personnel, ~\$20,000)
The Charles A. Lindbergh Fund (P.I.), 1985, ~\$10,000
Resources for the Future, 1982 (Research Associate; Jeff Krautkraemer, P.I.; ~\$10,000)

Consulting and paid authorships or reviews since 2005

US National Nuclear Security Administration (2015)
Catholic Health Net (2014)
US Coast Guard/Rolling Bay (2013)
Earth Economics (2012)
Federal Emergency Management Agency/Ideation (2011)
ExxonMobil Biomedical Services (2011)
Department of Homeland Security/CREATE (2010)
University of Washington (2009)
National Wildlife Federation (2009)
Environmental Protection Agency (2008)
Mercatus Institute, George Mason University (2008)
Resources for the Future (2008, 2010)
ExxonMobil Corporation (2007)
Constellation Energy (2007-2009)

Fellowships

Senior Research Fellow, The Woods Hole Oceanographic Institution, 1998, 2012.
Marine Policy /Ocean Management Fellowship, Woods Hole Oceanographic Institution, 1988.
Law Institute for Economists, George Mason University, 1987.

Conferences Organized

Society for Benefit-Cost Analysis, First Annual Meeting; Paper and session coordinator, Washington, D.C., May, 2008

“Economic Performance Measures,” a workshop hosted by the US Governmental Accountability Office, December 17, 2004, Washington, D.C. See US GAO, “Economic Performance: Highlights of a Workshop on Economic Performance Measures,” GAO-05-796SP, July, 2005.

Conferences Organized: continued

"Implementing Emissions Trading," a conference co-hosted by the Pennsylvania Public Utility Commission and the Heinz School of Public Policy. Endorsed by the National Association of Regulatory Utility Commissioners, December 8-9, 1993, Pittsburgh, Pennsylvania.

Editing/Journal activities

Founding Editor, *Journal of Benefit-Cost Analysis* (2009-2014); Cambridge University Press available at <http://journals.cambridge.org/action/displayJournal?jid=BCA> and <http://www.degruyter.com/jbca> .

Coordinator, special edition on economics at the U.S. Government Accountability Office, *Contemporary Economic Policy*, January, 2007.

Associate-editor, Environment Section, *Historical Statistics of the United States*, Millennium Edition, Cambridge University Press, 2005.

Guest Associate Editor, Environmental Valuation Special issue of *Environmental Science and Technology*, April 15, 2000

Editorial Council, *Journal of Environmental Economics and Management*, 1988-1990.

Reviewer, among others, for: *Journal of Environmental Economics and Management*, *Review of Economics and Statistics*, *Energy Journal*, *Natural Resources and Energy*, *Environmental Science and Technology*, *Risk Analysis*, *Southern Economic Journal*, *Water Resources Research*.

Recent Ph.D. Committees

UMBC

- Nicole Katsikides (member, 2019) Freight Transportation Metrics
- Harold Wallace (member, 2018) Electric Policy in the Federal Government
- Jamie Falcon (Chair, 2016) Evaluating Near Shore Spinal Injuries
- James Howard (Chair, 2014), Benefits and Costs/National Flood Insurance Program.
- Danielle Schwartzman (member, 2012), Valuing Stream Restoration.
- Dan Miles (member, 2011), Three Essays in Water Quality and Urban Development.

Carnegie Mellon University

- David Stickers, 2004. "Risk Regulation of Transportation Fuels: An Analysis of Stakeholder Behavior and Regulatory Outcomes."
- Martin Schultz, 2002. "Performance Assessment in Water Quality Regulation."
- Felicia Wu, 2002. "Tools for Regulatory Decisions Concerning GM Corn."

Professional and Honorary Societies

American Economic Association

Association of Environmental and Resource Economists

Environmental Executives, 1992

Phi Kappa Phi National Honor Society (Chapter Secretary, 2016)

Professional and Honorary Societies: continued

Society for Benefit-Cost Analysis (Constitutional Committee, Program Committee 2010, Board of Directors, 2010-2013)

Who's Who in America, multiple editions.

Who's Who in the East-multiple editions

Who's Who in the World, multiple editions

Periodically: Society for Risk Analysis (Chair, Specialty Group on Economics, 2002-2003; Program committee, 2003), Association for Public Policy Analysis and Management

Awards

Journal of Benefit-Cost Analysis Award, 2018.

Society for Benefit-Cost Analysis Richard O. Zerbe Distinguished Service Award, 2014.

Economics Department Professor of the Year, UMBC, 2006/2007.

Finalist, Best Paper Competition, Society for Risk Analysis for "Merging Risk Assessment, Benefit-Cost Analysis, and Real Options", 2002.

3 Rivers Environmental Awards Finalist, Higher Education, Center for the Study and Improvement of Regulation (S. Farrow, Director), 2000.

Selected Presentations (including multiple years at some Association conferences)

Alberta Gaming Research Institute/Banff	Association of Environmental and Resource
Allied Social Science Association	Economists workshops
American Association for the Advancement	Czech Republic, Parliament of the Czech
of Science	Republic (Environ. Comm),Czech Academy
American Bar Association-Anti-trust Section	of Science
American University	Environmental Economics Workshop, Almaty,
APPAM	Kazakhstan
Columbia University	Government Buy Recycled Products Trade Fair
Duke University	Ministry/Environment of the Czech Republic
Resources for the Future	Military Operations Research Society
Society for Toxicology	NBER summer institute/environment
University of California at Berkeley	OECD
University of Kentucky	Phi Kappa Phi Inaugural Lecture, UMBC
University of Milan	Society for Benefit-Cost Analysis
University of Southern California	Society for Risk Analysis
University of Toulouse	Southwest Intergovernmental Audit Forum
University of Wyoming	Southern Economic Association
Woods Hole Oceanographic Institution	US Department of Homeland Security
Yale University	US Dept. of Health and Human Services
University of Washington	Western Economics Association
Terrorism and Homeland Security:	World Congress-Environmental Economists
UTDallas, CREATE/USC/DHS	

National, State and Local Committees and Activities

National Science Foundation: review panel for Secure and Trustworthy Cyberspace/SBE, 2016.
Scientific Advisory Committee, Department of Homeland Security/Univ. of Southern California
National Center for Risk and Economic Analysis of Terrorism Events (2011-2013, 2015)
National Commission on Energy Policy, Task Force on Green Jobs (2010)
Society for Benefit-Cost Analysis: Constitutional and Program Committees (2007);
Board of Directors (2008-2011).
National Science Foundation: review panel for Human and Social Dynamics (2006)
Society for Risk Analysis
Chair, Economics and Risk specialty group (2002-2003)
Paper selection committee (2003)
Whitman College, Visiting Educator (1999)
U.S. EPA Effluent Guidelines Task Force, National Advisory Council for Environmental Policy
and Technology (1994-1997)
Miami Valley Business Economists, Trustee, (1994-1996)
U.S. Department of State, Man and the Biosphere Program, Marine and Coastal Ecosystems
Directorate (1990-1995)
Three Rivers Environmental Awards, academic advisor, Pittsburgh, Pennsylvania, 1994.
U.S. Department of the Interior, Science committee (chair, socioeconomics sub-committee) of
the Outer Continental Shelf Advisory Board, (1990-1993.)
Advisory Group to the Lt. Governor of Pennsylvania, Future Industries/Green Industries (1993)
Pittsburgh United Way review committee for the elderly and disadvantaged, 1988-1989