# **RICHARD G. NEWELL**

OFFICE
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# EDUCATION

Ph.D., Harvard University, Public Policy (Environmental and Resource Economics)	1997
M.P.A., Princeton University, Woodrow Wilson School, Public Policy	1990
B.S., Rutgers University, College of Engineering, Materials Engineering, Tau Beta Pi	1988
B.A., Rutgers University, Rutgers College, Philosophy, Phi Beta Kappa	1988
PROFESSIONAL POSITIONS	
Director, Duke University Energy Initiative, Duke University	2011-present
Gendell Professor of Energy and Environmental Economics, Nicholas School of the Environment, Duke University	2007–present
Administrator, U.S. Energy Information Administration, U.S. Department of Energy	2009-2011
Professor of Economics (secondary appointment), Department of Economics, Duke University	2011-present
Professor of Public Policy (secondary appointment), Sanford School of Public Policy, Duke University	2013-present
Senior Economist for Energy and Environment, President's Council of Economic Advisers, Washington, DC	2005–2006
Senior Fellow, Resources for the Future, Washington, DC	1997-2006
Ian Axford Fellow, New Zealand Fulbright Program, Wellington, New Zealand	2004
Teaching Fellow, Harvard University, Cambridge, MA	1993–1997
Senior Associate, ICF Incorporated, Fairfax, VA	1990–1993
PROFESSIONAL AFFILIATIONS	
Member, Board of Directors, Resources for the Future	2011-present
Research Associate, National Bureau of Economic Research	2008-present
Co-Editor, Review of Environmental Economics and Policy	2013-present
Member, Policy Roundtable of the Behavioral and Social Sciences, National Academies	2013-present
Member, Study Committee, American Academy of Arts and Sciences Project on the Alternative Energy Future	2011-present
Contributing Author, IPCC Fifth Assessment Report, Working Group III	2011-present
Lead Author, U.S. National Climate Assessment, Effects on Energy Production	2011-present
University Fellow, Resources for the Future	2007–present
Advisor and consultant to private sector, federal and state agencies, international organizations, and nongovernmental organizations	1989–present
Member, Editorial Board, Review of Environmental Economics and Policy	2011–2013

Member, Coordinating Sub-Committee, National Petroleum Council (NPC)	
Study on the Future of Transportation Fuels	2010-2012
Member, Coordinating Sub-Committee, NPC Study on North American Resource Development	2010–2011
Member, Steering Committee, Quadrennial Energy Technology Review,	
U.S. Department of Energy	2010-2011
Committee on Energy Externalities, National Academy of Sciences	2008-2009
Board Member, Association of Environmental and Resource Economists (AERE)	2008-2009
Advisory Board, Princeton Carbon Mitigation Initiative	2007-2009
Editorial Council, Journal of Environmental Economics and Management	2007-2009
Advisory Board, Progressive Automotive X-Prize	2006-2009
Editorial Board, Energy Economics	2003-2009
Affiliate, Motu Economic and Public Policy Research, Wellington, New Zealand	2003-2009
Advisory Board, Study on the Energy Efficiency Potential of the Appalachian Region	2007-2009
Chair, Workshop on Economics of Climate Change, National Academy of Sciences	2008
Committee on Energy Efficiency Standards, National Academy of Sciences	2007-2009
Committee on Geopolitics & Policy, NPC Global Oil & Gas Study	2006-2007
Committee on NSF Innovation Inducement Prizes, National Academy of Sciences	2006-2007
Committee on the Benefits of Energy R&D, National Academy of Sciences	2005-2007

### **PUBLICATIONS**

#### Journal Articles

- Arrow, K.J., M.L. Cropper, C.G., C. Gollier, B. Groom, G.M. Heal, R.G. Newell, W.D. Nordhaus, R.S. Pindyck, W.A. Pizer, P.R. Portney, T. Sterner, R.S.J. Tol and M.L. Weitzman. Forthcoming. How should benefits and costs be discounted in an intergenerational context? *Review of Environmental Economics and Policy*.
- Arrow, K.J., M.L. Cropper, C.G., C. Gollier, B. Groom, G.M. Heal, R.G. Newell, W.D. Nordhaus, R.S. Pindyck, W.A. Pizer, P.R. Portney, T. Sterner, R.S.J. Tol and M.L. Weitzman. 2013. Determining benefits and costs for future generations. *Science* 341:349-350.
- Newell, R.G., W.A. Pizer, and D. Raimi. 2013. Carbon markets 15 years after Kyoto: Lessons learned, new challenges. *Journal of Economic Perspectives* 27(1):123-146. Prepublication version available as NBER Working Paper 18504, Cambridge, MA.
- Eccles, J.K., L. Pratson, R.G. Newell, E. Williams, and R.B. Jackson. 2012. The impact of geologic variability on capacity and cost estimates for storing CO<sub>2</sub> in deep-saline aquifers. *Energy Economics* 34(5):1569-1579.
- Arimura, T.H., Li, S., R.G. Newell, and K. Palmer. 2012. Cost-effectiveness of electricity energy efficiency programs. *The Energy Journal* 33(2):63-99. Prepublication version available as NBER Working Paper 17556, Cambridge, MA.
- Popp, D and R.G. Newell. 2012. Where does energy R&D come from? Examining crowding out from energy R&D. *Energy Economics* 34(4):980–991. Prepublication version available as NBER Working Paper 15423, Cambridge, MA.

- Aldy, J.E., A.J. Krupnick, R.G. Newell, I.W.H. Parry, and W.A. Pizer. 2010. Designing climate mitigation policy. *Journal of Economic Literature* 48(4):1-32. Prepublication version available as NBER Working Paper 15022, Cambridge, MA.
- Newell, R.G. 2010. The role of markets and policies in delivering innovation for climate change mitigation. *Oxford Review of Economic Policy* 26(2):253-269.
- Gillingham, K., R.G. Newell, and K. Palmer. 2009. Energy efficiency economics and policy. Annual Review of Resource Economics 1: 597-619. Prepublication version available as NBER Working Paper 15031, Cambridge, MA.
- Murray, B., R.G. Newell, and W.A. Pizer. 2009. Balancing cost and emissions certainty: An allowance reserve for cap-and-trade. *Review of Environmental Economics and Policy* 3(1): 84-109. Prepublication version available as NBER Working Paper 14258, Cambridge, MA.
- Eccles, J.K., L. Pratson, R.G. Newell, and R.B. Jackson. 2009. Physical and economic potential of geological CO<sub>2</sub> storage in saline aquifers. *Environmental Science and Technology* 43: 1962-1969.
- Newell, R.G. and W.A. Pizer. 2008. Carbon mitigation costs for the commercial building sector: Discrete-continuous choice analysis of multi-fuel energy demand. *Resource and Energy Economics* 30(4):527-539. Prepublication version available as RFF Discussion Paper 05-13, Resources for the Future, Washington, DC.
- Newell, R.G. and W.A. Pizer. 2008. Indexed regulation. *Journal of Environmental Economics and Management* 56(3):221-233. Prepublication version available as RFF Discussion Paper 05-62, Resources for the Future, Washington, DC.
- Gillingham, K., R.G. Newell, and W.A. Pizer. 2008. Modeling endogenous technological change for climate policy analysis. *Energy Economics* 30:2734-2753. Prepublication version available as RFF Discussion Paper 07-14, Resources for the Future, Washington, DC.
- Fischer, C. and R.G. Newell. 2008. Environmental and technology policies for climate mitigation. *Journal of Environmental Economics and Management* 55(2):142–162.
- de Coninck, H., C. Fischer, R.G. Newell, and T. Ueno. 2008. International technology-oriented agreements to address climate change. *Energy Policy* 36:335-356.
- Newell, R.G., K.L. Papps, and J.N. Sanchirico. 2007. Asset pricing in created markets. *American Journal of Agricultural Economics* 9(2):259–272.
- Pizer, W.A., D. Burtraw, W. Harrington, R.G. Newell, and J.N. Sanchirico. 2006. Modeling costs of economy-wide versus sectoral climate policies using combined aggregate-sectoral models. *Energy Journal* 27(3):135–168.
- Gillingham, K., R.G. Newell, and K. Palmer. 2006. Energy efficiency policies: A retrospective examination. *Annual Review of Environment and Resources* 31:161–192.
- Jaffe, A.B., R.G. Newell, and R.N. Stavins. 2005. A tale of two market failures: Technology and environmental policy. *Ecological Economics* 54:164–174.
- Newell, R.G., W.A. Pizer, and J. Zhang. 2005. Managing permit markets to stabilize prices. *Environmental and Resource Economics* 31:133–157.
- Newell, R.G., J.N. Sanchirico, and S. Kerr. 2005. Fishing quota markets. *Journal of Environmental Economics and Management* 49:437–462.
- Kerr, S. and R.G. Newell. 2003. Policy-induced technology adoption: Evidence from the U.S. lead phasedown. *Journal of Industrial Economics* 51(3):317–343.

(Reprinted in V. McConnell and W. Harrington, eds. 2007. *Controlling Automobile Air Pollution. International Library of Environmental Economics and Policy* series, T. Tietenberg and K. Segerson, series eds. Hampshire, UK: Ashgate.)

- Anderson, S.T. and R.G. Newell. 2004. Information programs for technology adoption: The case of energy-efficiency audits. *Resource and Energy Economics* 26(1):27–50.
- Anderson, S.T. and R.G. Newell. 2004. Prospects for carbon capture and storage technologies. Annual Review of Environment and Resources 29:109–142.
- Newell, R.G. and W.A. Pizer. 2003. Discounting the distant future: How much do uncertain rates increase valuations? *Journal of Environmental Economics and Management* 46(1):52–71.
- Newell, R.G. and W.A. Pizer. 2003. Regulating stock externalities under uncertainty. *Journal of Environmental Economics and Management* 45:416–432.
- Newell, R.G. and R.N. Stavins. 2003. Cost heterogeneity and the potential savings from marketbased policies. *Journal of Regulatory Economics* 23(1):43–59.
- Boyd, J., D. Burtraw, A. Krupnick, V. McConnell, R.G. Newell, K. Palmer, J. Sanchirico, and M. Walls. 2003. Trading cases: Is trading credits in created markets a better way to reduce pollution and protect natural resources? *Environmental Science and Technology* 37(11):217–223.
- Newell, R.G. and W.A. Pizer. 2003. Uncertain discount rates in climate policy analysis. *Energy Policy* 32(4):519–529.
- Anderson, S.T. and R.G. Newell. 2003. Simplified marginal effects in discrete choice models. *Economics Letters* 81(3):321–326.
- Jaffe, A.B., R.G. Newell, and R.N. Stavins. 2002. Environmental policy and technological change. *Environmental and Resource Economics* 22:41–69.

(Reprinted in Hoel, M., ed. 2004. *Recent Developments in Environmental Economics, Vol. 2.* Cheltenham, UK: Edward Elgar.)

(Reprinted in van den Bergh, C.J.M., K. Button, and P. Nijkamp, eds. 2007. *Environmental Planning. Classics in Planning* series. Cheltenham, UK: Edward Elgar.)

- Newell, R.G. and R.N. Stavins. 2000. Climate change and forest sinks: Factors affecting the costs of carbon sequestration. *Journal of Environmental Economics and Management* 40:211–235.
- Newell, R.G., A.B. Jaffe, and R.N. Stavins. 1999. The induced innovation hypothesis and energy-saving technological change. *Quarterly Journal of Economics* 114(3):941–975.
  (Reprinted in Grubler, A., N. Nakićenović, and W.D. Nordhaus, eds. 2002. *Technological*

*Change and the Environment*, pp. 97–126. Washington, DC: RFF Press.)

Newell, R.G., B.P. Feuston, and S.H. Garofalini. 1989. The structure of sodium trisilicate glass via molecular-dynamics employing 3-body potentials. *Journal of Materials Research* 4(2):434– 439.

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

- Newell, R.G. and S. Iler. 2013. The Global Energy Outlook. In *Energy & Security: Towards a New Foreign Policy Strategy* (2<sup>nd</sup> ed.), J.H. Kalicki and D.L. Goldwyn, eds. Washington, DC: Johns Hopkins University Press.
- Newell, R.G. 2011. The Energy Innovation System: A Historical Perspective. In Accelerating Energy Innovation: Insights from Multiple Sectors. Edited by R.H. Henderson and R.G.

Newell. Chicago: University of Chicago Press for the National Bureau of Economic Research.

- Henderson, R.H. and R.G. Newell. 2011. Introduction and Summary. In *Accelerating Energy Innovation: Insights from Multiple Sectors*. Edited by R.H. Henderson and R.G. Newell. Chicago: University of Chicago Press for the National Bureau of Economic Research.
- Popp, D., R.G. Newell, and A.B. Jaffe. 2010. Energy, the Environment, and Technological Change. In *Handbook of the Economics of Innovation Vol. II*, Edited by B.H. Hall and N. Rosenberg. North Holland. Prepublication version available as NBER Working Paper 14258, Cambridge, MA.
- Newell, R.G. 2009. International Climate Technology Strategies. In Post-Kyoto International Climate Policy: Implementing Architectures for Agreement. Edited by J.E. Aldy and R.N. Stavins. Cambridge: Cambridge University Press.
- Newell, R.G. and K. Rogers. 2007. The market-based lead phasedown. In *Moving to Markets in Environmental Regulation: Lessons from Twenty Years of Experience*, pp. 173-193. Edited by J. Freeman and C. Kolstad. Oxford: Oxford University Press.
- Newell, R.G., A.B. Jaffe, and R.N. Stavins. 2004. The economics of energy efficiency. In *Encyclopedia of Energy, Vol. 2*, pp. 79–90. Edited by C. Cleveland. Amsterdam: Elsevier.
- R.J. Kopp, R.D. Morgenstern, R.G. Newell, and W.A. Pizer. 2004. Stimulating technology to slow climate change. In *New Approaches on Energy and the Environment: Policy Advice for the President*, pp. 14–18. Edited by P.R. Portney and R.D. Morgenstern. Washington, DC: RFF Press.
- Newell, R.G. and K. Rogers. 2004. Leaded gasoline in the United States: The breakthrough of permit trading. In *Choosing Environmental Policy: Comparing Instruments and Outcomes in the United States and Europe*, pp. 175–191. Edited by W. Harrington, R. Morgenstern, and T. Sterner. Washington, DC: RFF Press.
- Kerr, S., R.G. Newell, and J.N. Sanchirico. 2004. Evaluating the New Zealand individual transferable quota market for fisheries management. In *Tradeable Permits Policy Evaluation, Design and Reform*, pp. 121–134. Paris: OECD.
- Jaffe, A.B., R.G. Newell, and R.N. Stavins. 2003. Technological change and the environment. In Handbook of Environmental Economics, Vol. 1, pp. 461-516. Edited by K.-G. Mäler and J. Vincent. Handbooks in Economics series, K.J. Arrow and M.D. Intriligator, series eds. Amsterdam: North-Holland/Elsevier.
- Jaffe, A.B., R.G. Newell, and R.N. Stavins. 2001. Energy-efficient technologies and climate change policies: Issues and evidence. In *Climate Change Economics and Policy: An RFF Anthology*, pp. 171–181. Edited by M. Toman. Washington, DC: RFF Press.
- Lee, H., R.G. Newell, and R.N. Stavins. 1994. Developments at the interface of U.S. energy and environmental policy. In *Energy and the Environment: Evolving Challenges and Opportunities*, pp. 1–33. Cambridge, MA: Harvard International Energy Studies.

#### **Other Publications**

Newell, R.G. 2011. Securing energy for America's future. The Hill Vol. 18 Issue 122, p36.

Newell, R.G. 2011. Innovation essential for growing energy demands. *The Hill* Vol. 18 Issue 122, p35.

- Reichman, J, A. Rai, R.G. Newell, and J. Wiener. 2008. Intellectual Property and Alternatives: Strategies for Green Innovation. Prepared for Chatham House, London, UK.
- Newell, R.G. 2008. A U.S. Innovation Strategy for Climate Change Mitigation. Hamilton Project Discussion Paper 2008-15, Brookings Institution, Washington, DC.
- Newell, R.G. and D. Hall. 2007. U.S. Climate Mitigation in the Context of Global Stabilization. Issue Brief 2 in *Assessing U.S. Climate Policy Options*. Washington, DC. Resources for the Future.
- Newell, R.G. 2007. Climate Technology Research, Development, and Demonstration: Funding Sources, Institutions, and Instruments. Issue Brief 9 in *Assessing U.S. Climate Policy Options*. Washington, DC. Resources for the Future.
- Newell, R.G. 2007. Climate Technology Deployment Policy. Issue Brief 10 in Assessing U.S. *Climate Policy Options*. Washington, DC. Resources for the Future.
- Newell, R.G. 2006. What's the big deal about oil? How can we get oil policy right. *Resources* 163:6–10.

(Reprinted in *CURRENT*, July/August 2007 (number 494). Washington, DC: Heldref Publications.)

- Newell, R.G. 2005. The hydrogen economy: Laying out the groundwork. Resources 156:20-23.
- Gillingham, K, R.G. Newell, and K. Palmer. 2005. The effectiveness and cost of energy efficiency programs. *Resources* 155:22–25.
- Newell, R.G. and J.N. Sanchirico. 2003. Saving fish and America's fishermen. *Providence Journal*, Dec. 18.
- Sanchirico, J.N. and R.G. Newell. 2003. Catching market efficiencies. Resources 150:8–11.
- Newell, R.G. and W.A. Pizer. 2002. Discounting the benefits of climate change policies using uncertain rates. *Resources* 146:15–20.
- Newell, R.G. and W.A. Pizer. 2001. Discounting the benefits of climate change mitigation: How much do uncertain rates increase valuations? Arlington, VA: Pew Center on Global Climate Change.
- Newell, R.G. 2000. Balancing policies for energy efficiency and climate change. *Resources* 140:14–17.
- Berg, M., R. Nevin, and R.G. Newell. 1992. Advance disposal fees: Good theory—bad policy. *Environmental Finance* Spring:83–91.

#### Articles Under Review, Working Papers, and Reports

- Newell, R.G. and D. Raimi. 2013. Implications of shale gas development for climate change. Under review.
- Newell, R.G. and J. Siikamaki. 2013. Nudging energy efficiency behavior: The role of information labels. Under review.
- Newell, R.G. and N.E. Wilson. 2005. Technology prizes for climate change mitigation. RFF Discussion Paper 05-33. Washington, DC: Resources for the Future.
- Newell, R.G., W.A. Pizer, and J.-S. Shih. 2004. Estimating the gains to emission trading. Washington, DC: Resources for the Future.
- Chow, J. and R.G. Newell. 2004. Retrospective review of energy R&D programs. Report to the National Commission on Energy Policy. Washington, DC: Resources for the Future.

- Sawyer, D., C. Fischer, and R.G. Newell. 2004. Ecological fiscal reform and energy case study on renewable grid power electricity. National Round Table on Environment and Economy. Ottawa: Marbek Resource Consultants.
- Pizer, W.A., D. Burtraw, W. Harrington, R.G. Newell, and J.N. Sanchirico. 2004. General and partial equilibrium modeling of sectoral policies to address climate change in the United States. Technical report to the Department of Energy. Washington, DC: Resources for the Future.
- Newell, R.G. and J.N. Sanchirico. 2003. Analysis of concentration and consolidation in New Zealand fishing quota markets. Report to the New Zealand Ministry of Fisheries. Washington, DC: Resources for the Future.
- Newell, R.G., J.N. Sanchirico, and S. Kerr. 2003. Evaluating the New Zealand individual transferable quota market for fisheries management. Report to the New Zealand Ministry of Fisheries. Washington, DC: Resources for the Future.

#### **RESEARCH GRANTS AND AWARDS**

- Public Finance Implications of unconventional gas and Oil Development. 2013-2014. Alfred P. Sloan Foundation, 2012. With R. Stavins, Harvard University.
- Reforming Energy Subsidies. Bipartisan Policy Center. 2012-2013. With W. Pizer.
- Advancing Energy-Efficiency Research, Policy, and Practice. 2012-2014. Alfred P. Sloan Foundation, 2012. With R. Stavins, Harvard University.
- Analyzing the Impacts of Multiple Interacting Environmental Policy Instruments, U.S. Environmental Protection Agency, 2009–2011. With C. Fischer.
- A Conceptual and Empirical Framework for Analyzing Information Disclosure, U.S. Environmental Protection Agency, 2006–2008. With I. Parry, J. Siikamäki, and C. Fischer.
- Emissions Trading and other Policies Instrument for Climate Change: Phase 2 (EPICC), MISTRA Swedish Foundation for Strategic Environmental Research, 2007–2010. With D. Burtraw and R. Kopp.
- Knowledge Spillovers and the Opportunity Costs of Climate Mitigation R&D, U.S. Department of Energy, 2004–2008. With D. Popp (Syracuse).
- The Role of Emission Trading in Climate Policy: Phase 1 (ETIC), MISTRA Swedish Foundation for Strategic Environmental Research, 2004–2007. With D. Burtraw and R. Kopp.
- Economic and Policy Analysis of Multi-species Fisheries Management, New Zealand Ministry of Fisheries, 2004–2006. With J. Sanchirico.
- Evaluation of Demand-Side Energy-Efficiency Programs, National Commission on Energy Policy, 2003. With K. Palmer.
- Review of Energy R&D and Technology Policy, National Commission on Energy Policy, 2003–2004.
- Workshop on Learning-by-Doing in Energy Technologies, Hewlett Foundation, 2003. With R. Kopp.
- Treatment of Technological Change in Aggregate Models of Environment, Energy, and the Economy, U.S. Environmental Protection Agency, 2003–2004. With W. Pizer.
- Choosing Policies for Encouraging Carbon-Reducing Technology, U.S. Environmental Protection Agency, 2002–2003. With C. Fischer.

- Economic Fishery Conservation Through Individual Transferable Quota: Evidence from the New Zealand Experience, New Zealand Ministry of Fisheries, 2002. With J. Sanchirico.
- Economic Fishery Conservation Through Individual Transferable Quota: Evidence from the New Zealand Experience, Resources for the Future Strategic Grant, 1999–2001. With J. Sanchirico.
- The Effects of Government Policies on the Invention, Innovation, and Diffusion of Energy-Efficient Technologies, U.S. Department of Energy, 1998–2001. With A. Jaffe (Brandeis) and R. Stavins (Harvard).
- Estimating the Cost Savings from Incentive-Based Environmental Policies when Costs are Heterogeneous, National Science Foundation, 1999–2001. With W. Pizer.
- Policy-Induced Technology Adoption: Evidence from the U.S. Lead Phasedown, U.S. Environmental Protection Agency, 1999.
- Heterogeneity in Abatement Costs and the Potential Gains from Using Market-Based Environmental Policies, U.S. Environmental Protection Agency, 1999.
- Valuing the Future Consequences of Climate Change, Pew Center on Global Climate Change, 1998– 1999. With W. Pizer.
- Valuing the Future Consequences of Climate Change, Resources for the Future Strategic Grant, 1998–1999. With W. Pizer.
- Induced Energy-Saving Innovation in Industrial Durable Goods, U.S. Department of Energy, 1998–1999.
- An Integrated System for Analyzing Carbon Trading, U.S. Department of Energy, 1998–2001. With D. Burtraw, W. Pizer, and M. Toman.
- Review of the National Energy Modeling System Demand Module, U.S. Environmental Protection Agency, 1998. With D. Burtraw and K. Palmer.
- Energy-Efficiency Innovation and the Economic and Regulatory Environment, U.S. Department of Energy, 1995–1997. With A. Jaffe (Brandeis) and R. Stavins (Harvard)
- Fischer Dissertation Fellowship, Resources for the Future, 1996.

Joseph Crump Fellowship for Energy and Environmental Research, Harvard University, 1996.

Harvard Graduate Society Summer Research Grant, 1994.

Harvard University Graduate Fellowship, 1992–1997.

## **PROFESSIONAL ACTIVITIES**

#### Peer review

Regular peer reviewer of journal and book submissions, grant proposals, and conference paper submissions, including for: *American Economic Review*, *American Economic Journal: Economic Policy*, American Agricultural Economics Association, Association of Environmental and Resource Economists, Blackwell Publishers, *Climatic Change, Climate Policy, Contemporary Economic Policy*, Dutch Social Science Research Council, *Ecological Economics, Economic Journal, Energy Economics, Energy Journal, Energy Policy, Environment and Development Economics, Environmental and Resource Economics*, European Association of Environmental and Resource Economists, Intergovernmental Panel on Climate Change, *Journal of Applied Econometrics, Journal of Economic Dynamics and Control, Journal of Economica and Management, Journal of Policy Analysis and Management, Journal of Public Economics, NOVA, PNAS, RAND* 

Journal of Economics, Research Council of Norway, Resource and Energy Economics, RFF Press, Review of Economic Studies, Scandinavian Journal of Economics, MISTRA Swedish Foundation for Strategic Environmental Research, United Nations University Press, U.S. Department of Energy, U.S. Environmental Protection Agency, U.S. National Science Foundation.

#### Conference, Workshop, and Seminar Presentation

Regular invited speaker, discussant, and participant at national and international conferences, workshops, and seminars including: American Economic Association meetings, Association of Environmental and Resource Economists meetings, National Bureau of Economic Research meetings (Environmental and Energy Economics, Public Policy and Environment, Innovation Policy and the Economy), European Association of Environmental and Resource Economists meetings, Advanced Research Projects Agency-Energy (ARPA-E, Washington, DC), Aspen Institute Energy Policy Forum (Aspen), Aspen Institute Global Energy Forum (Aspen), Autumn Energy Conference (Oslo), Biomass Forum (St. Louis), Brookings Institution (Washington, DC), The Business Council, Carnegie Mellon University, Center for Climate Policy Solutions, CERAWEEK (Houston), Conference of the Parties to the United Nations Framework Convention on Climate Change (Milan), Dartmouth College, Duke University, Energy Foundation, Energy Modeling Forum, FLAME Natural Gas Conference (Amsterdam), Fondazione Eni Enrico Mattei (Venice, Milan), Free University (Amsterdam), French Institute of International Relations (Paris), Georgetown University, Georgia Tech University, German Federal Ministry of Education and Science (Chiemsee), Harvard University, Harvard Project on International Agreements (Venice), Helsinki School of Economics (Helsinki), International Association for Energy Economics (Rio De Janeiro), International Energy Agency (Paris), International Institute for Applied Systems Analysis (Laxenburg), Institute for Global Environmental Strategies (Tokyo), Global Industrial and Social Progress Research Institute (Tokyo), International Association of Energy Economists, IPEACA, KAPSARC 2011 Energy Dialogue (Riyadh), London School of Economics, Natural Gas Roundtable, North Carolina State University, Ocean Law Project, Organization for Economic Cooperation and Development (OECD, Paris), Pew Center on Global Climate Change, Princeton University, Research Triangle Energy Consortium, Resources for the Future, Shanghai Forum (Shanghai), Stanford University, Swedish Foundation for Strategic Environmental Research (Stockholm), U.S. Association for Energy Economics, U.S.-China Strategic and Economic Dialogue, U.S. Department of Energy, U.S. Energy Information Administration, U.S. Environmental Protection Agency, University of California Santa Barbara, University of Chicago, University of Massachusetts, Texas A&M University, World Energy Congress (Montreal), World Future Energy Summit (Abu Dhabi), World National Oil Companies Congress (London), World National Gas Conference (Buenos Aires), Yale University (New Haven), ZEW (Bonn, Mannheim).

#### **Congressional Testimony**

Senate Agriculture, Nutrition, and Forestry Committee March 30, 2011 Hearing on "Evaluating High Gas Prices and How New Rules and Innovative Farming Can Help"

House Natural Resources Committee March 17, 2011 Hearing on "Harnessing American Resources to Create Jobs and Address Rising Gasoline Prices: Domestic Resources and Economic Impacts"

Senate Energy and Natural Resources Committee March 15, 2011 Briefing on "Oil Markets and the Impacts of Recent Events in the Middle East and North Africa"

House Energy and Commerce Committee, Subcommittee on Energy and Power Hearing on "The Effects of Middle East Events on U.S. Energy Markets"	February 10, 2011
Senate Energy and Natural Resources Committee Hearing on "The Energy and Oil Market Outlook for the 112th Congress"	February 3, 2011
Senate Energy and Natural Resources Committee Hearing on "The Role of Natural Gas in Mitigating Climate Change"	October 28, 2009
Senate Energy and Natural Resources Committee Hearing on "Energy and Related Economic Effects of Global Climate Change .	October 14, 2009 Legislation"
Senate Energy and Natural Resources Committee Confirmation hearing	July 9, 2009
Duke University Service	
Director, Duke University Energy Initiative	2011-present
Leader, Bass Connections in Energy	2012-present
Member, Search Committee, Nicholas Energy & Environment Search	2011-present
Member, Search Committee, Sanford Energy Policy Search	2011-present
Core Faculty, Energy and Environment Program	2007-present
Core Faculty, Environmental Economics and Policy Program	2007-present
Member, Campus Sustainability Committee and Energy Subcommittee	2007-present
Chair, Review Committee, Dalia Patino-Echeverri	2011
Member, Steering Committee, Ph.D. in Public Policy	2008-2009
Representative, Academic Council	2007-2009
Chair, Ad Hoc Committee on Doctoral Education in Environmental Policy	2007-2009
Core Faculty, Corporate Sustainability Initiative	2007-2009
Member, Environment Ph.D. Admissions Committee	2007-2009

## Teaching

Connections in Energy Project, ENERGY 396 Energy Economics and Policy, ENV 635 Climate Change Economics and Policy, ENV 298.83 Environmental Social Science PhD Workshop, ENV 391 Independent Study on Local Carbon Offsets, 2007-2008 Independent Study on Marine Biodiesel, 2008-2009 Independent Study on the Economics of Biofuel Energy Security, 2008-2009 Independent Study on the Economics of Automobile Fuel Economy, 2008-2009

#### **PhD** Committees

Brian Prest (2013-present) Dave Bielen (2013-present) Rubenka Bandyopadhyay (2012-present) Ashley Vissing (2012-present) Peter Maniloff (2008-2013)

Kyle Bradbury (2011-2013) Jordan Eccles (2007-2011) Sanya Carley (2009-2010) Heekyu Song (2008-2010) MasZachary Brown (2007-2010) Madeline Baker (2007-2009)

#### Masters Projects Advised

Alex Osteen et al., Electricity Capacity Modeling Project, 2012-present Corey Barnes, Alisha Kuzma, Max Marshall, Duke U. Energy Investment Index, 2012-present Peter Ordal, Energy Data Access at Duke University, 2011-2013 Kent Truckor, Power Transition in U.S. Virgin Islands, 2012-2013 Tina Prapotnick, Arctic Energy Trends and Implications, 2012-2013 Dianiel Raimi, Potential Social Impacts of Natural Gas Extraction in North Carolina, 2011-2012 Shana Patadia, Implications of Electric Vehicle Expansion in California, 2011-2012 Venai Shenoi, Reducing Emissions from Air Transport, 2011-2012 Benjamin Mann, Effects of U.S. Ethanol Incentive Programs, 2008-2009 Brent Wanner, Renewable Energy Markets and Polices, 2007-2009 Andres Potes, Duke Transportation Greenhouse Gas Reductions, 2007-2008 Patrick Bean, Ethanol Market Assessment, 2007-2008 Michael Leff, Carbon Cost Pass-Through in Electricity Markets, 2007-2008 Chelsea Conover, Biodiesel Market Assessment, 2007-2008