

Stephen P. Holland

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Positions

Assistant Professor: University of North Carolina-Greensboro, Aug. 2003-present.

Faculty Research Fellow: National Bureau of Economic Research (Environmental Economics and Energy), April 2008-present.

Visiting Research Associate: University of California Energy Institute, Aug. 2001 –Dec. 2003 and Aug. –Dec. 2007.

Research Topics: CO2 spillover effects, realtime electricity pricing and investment in generation capacity, realtime pricing and pollution, RECLAIM emissions permit market, intertemporal trading of emissions permits, collusion with exhaustible resources.

Economist: Bureau of Economics, Federal Trade Commission, Aug. 1999- Aug. 2002.

Antitrust and merger analysis: crude oil production, petroleum and natural gas pipelines, electricity generation, futures markets, petrochemicals, and petroleum refining.

Policy analysis: drafted OECD price transparency submission, analyzed EIA information disclosure reforms.

Education

Ph.D., Economics, University of Michigan, August 1999.

Dissertation: “Set-up Costs and Capacity Constraints in the Theory of Natural Resource Extraction,” chaired by Stephen Salant and Michael R. Moore.

Fields: Natural Resources and Environment, IO, Micro Theory, and Public Finance.

M.S., Agricultural Economics, Iowa State University, August 1994.

Thesis: “Some Economic Policies for Ameliorating the Tragedy of the Commons” chaired by Todd Sandler.

B.A., Mathematics, With distinction, University of Iowa, May 1989.

Published papers

“Greenhouse Gas Reductions under Low Carbon Fuel Standards?” (with Jonathan E. Hughes and Christopher Knittel) forthcoming in *American Economic Journal: Economic Policy*.

“Is Real-Time Pricing Green? The Environmental Impacts of Electricity Demand Variance,” (with Erin Mansur) forthcoming in *Review of Economics and Statistics*.

“Modeling Peak Oil,” *Energy Journal* (2008) 29(2): 61-80.

“The Short-Run Effects of Time-Varying Prices in Competitive Electricity Markets,” (with Erin Mansur) *Energy Journal* (2006) 27(4):127-155.

“Privatization of Water-Resource Development,” *Environmental and Resource Economics* (2006) 34: 291-315.

“On the Efficiency of Competitive Electricity Markets With Time-Invariant Retail Prices,” (with Severin Borenstein) *The RAND Journal of Economics*, 36(3) Autumn 2005 pp. 469-493.

“Set-up Costs and the Existence of Competitive Equilibria when Extraction Capacity Is Limited,” *Journal of Environmental Economics and Management* 46(3) November 2003, p. 539-56 .

“*Cadillac Desert* Revisited: Property Rights, Public Policy, and Water Resource Depletion,” (with Michael R. Moore) *Journal of Environmental Economics and Management* 46(1) July 2003, p. 131-155.

“Extraction Capacity and the Optimal Order of Extraction,” *Journal of Environmental Economics and Management* 45(3) May 2003, p. 569-588.

Papers under submission

“When to Pollute, When to Abate? Intertemporal Permit Use in the Los Angeles NOx Market” (with Michael R. Moore)

Working papers

“When to Pollute, When to Abate? Intertemporal Permit Use in the Los Angeles NOx Market” (with Michael R. Moore) CSEM WP 178, May 2008; NBER WP 14254, August 2008.

“Greenhouse Gas Reductions under Low Carbon Fuel Standards?” (with Christopher Knittel and Jonathan E. Hughes) CSEM WP 167 May 2007; NBER WP 13266, July 2007.

“The Distributional and Environmental Effects of Time-Varying Prices in Competitive Electricity Markets,” (with Erin T. Mansur) CSEM WP 143, May 2005.

“Is Real-Time Pricing Green?: The Environmental Impacts of Electricity Demand Variance,” (with Erin T. Mansur) CSEM WP 136 August 2004; NBER WP 13508, October 2007.

“On the Efficiency of Competitive Electricity Markets With Time-Invariant Retail Prices,” (with Severin Borenstein) CSEM WP 116, August 2003; NBER WP 9922, August 2003.

“Investment Efficiency in Competitive Electricity Markets With and Without Time-Varying Retail Prices,” (with Severin Borenstein), CSEM WP 106, July 2003.

“Subgame Perfection in Natural Resource Extraction,” (with Chad Hogan) demonstrates the limited potential for collusion in natural resource extraction by showing that the equilibrium value correspondence is single-valued for small stocks but is multiple-valued for larger stocks.

“Optimal Mixing, Sorting and Grading” shows that a monopoly will not necessarily produce an inefficient output mix under a simple linear mixing technology.

Honors, Grants, and Sponsored Research

UNC Research Competitiveness Grant: “Economic and Environmental Impacts of the Production and Transportation of Crop Residues as Bioenergy Feedstocks” (with Mark Burkey, PI, Lyubov Kurkalova, and Abolghasem Shahbazi) Spring 2008: \$132,739.

Beta Gamma Sigma, 2007.

EPA-NCER STAR grant: “The Market for RECLAIM Trading Credits: A Theoretical and Empirical Investigation of Intertemporal Trading and Cost Effectiveness” (with Michael R. Moore co-PI) Oct. 1, 2004- Sept. 30, 2006: \$119,498

Federal Trade Commission Outstanding Team Award, 2000.

RFF Joseph L. Fisher Dissertation Fellowship, 1998-1999.

Michael J. Moore Dissertation Prize, 1998.

Rackham Dissertation Fellowship, 1997.

University of Michigan Regents Fellowship, 1994-1996.

Gamma Sigma Delta, Honor Society for Agriculture, 1993.

U.S.D.A. National Needs Fellowship, 1993-1994.

Phi Beta Kappa, 1988.

Seminars and Presentations

“The Carbon Cost of Cofiring Corn Stover in Coal-Fired Power Plants,” UC Energy Institute, June 27, 2008.

“Evaluating Emissions Trading Using a Nearest (Polluting) Neighbor Estimator,” UNCG, May 7, 2008; UC Energy Institute, June 24, 2008; Camp Resources, August 7, 2008.

“Greenhouse Gas Reductions under Low Carbon Fuel Standards?” NBER Environmental and Energy Economics Program Meeting, February 8, 2008; University of Central Florida, February 22, 2008; International Industrial Organization Conference, May 17, 2008.

“When to Pollute, When to Abate? Evidence on Intertemporal Permit Use in the Los Angeles NO_x Market,” UC Energy Institute, September 21, 2007; UC Santa Barbara, October 19, 2007.

“CO₂ Spillover Effects from the Environmental Regulation of Power Plants,” International Industrial Organization Conference, April 14, 2007; UC Berkeley ARE, November 30, 2007.

“Nearest Polluting Neighbors Estimates: An Empirical Assessment of the RECLAIM Market,” (with Erin Mansur and Meredith Fowlie) UC Energy Institute, June 30, 2006.

“Pollutant Spillovers and the Effectiveness of Environmental Regulations on Power Plants” University of North Carolina-Greensboro, June 1, 2006; UC Energy Institute, June 28, 2006; Southern Economic Association November 18, 2006.

“Modeling Peak Oil,” University of North Carolina-Greensboro, March 17, 2006; University of West Virginia, March 31, 2006; Appalachian State University, April 21, 2006; Southern Economic Association November 19, 2006.

- “The Distributional and Environmental Effects of Time-Varying Prices in Competitive Electricity Markets,” (with Erin Mansur) University of Richmond, February 25, 2005, NC State/RTI, October 18, 2005.
- “The Benefits of Flat Bills,” UC Energy Institute, June 27, 2005.
- “The Political Economy and Environmental Effects of Real-Time Pricing Adoption in Competitive Electricity Markets,” (with Erin Mansur) University of North Carolina-Greensboro, April 2, 2004, and UC Energy Institute, June 28, 2004.
- “Raising Rivals’ Costs in the RECLAIM Permit Market” (with Erin Mansur and Meredith Fowlie) UC Energy Institute, August 29, 2003.
- “Is Real-time Pricing Green?” UCEI Power Conference, Berkeley, CA. (with Erin Mansur), March 14, 2003; International Industrial Organization Conference, Northwestern University, Chicago, IL April 24, 2004.
- “Investment Efficiency in Competitive Electricity Markets With and Without Time-Varying Retail Prices” Econometrics Society Summer Meetings, Northwestern University, Evanston, IL, June 28, 2003; Center for Research in Regulated Industries Western Conference, San Diego, CA, June 26, 2003; International Industrial Organization Conference, Northeastern University, Boston, MA, April 4, 2003; Department of Economics, UC Berkeley, CA, November 26, 2002.
- “The Impact of Time-Varying Prices on Investment in Electricity Markets,” UC Energy Institute, Oct. 4, 2002.
- “Privatization of Water-Resource Development,” UC-Davis ARE, March 7, 2002; UC-Berkeley ARE, March 8, 2002; U. of Michigan, April 12, 2002; AERE/EAERE World Congress June 23, 2002; University of North Carolina-Greensboro, January 24, 2003; St. Joseph’s University, January 28, 2003; Rensselaer Polytechnic Institute, January 29, 2003; Amherst College, January 30, 2003; Clark University, January 31, 2003; California State University-Sacramento, February 6, 2003.
- “Is Collusion Possible in Natural Resource Extraction,” Berkeley-Stanford Conference in Industrial Organization, October 27, 2001.
- “Extraction Capacity and the Optimal Order of Extraction,” UC Energy Institute, Sept. 21, 2001.
- “Competition and the EIA Information Disclosure Reforms,” Harvard Electricity Policy Group Plenary Session, June 11, 2001.
- “Antitrust Problems and Solutions in the Gas/Electric Convergence,” UC Energy Institute, April 6, 2001.
- “*Cadillac Desert* Revisited: Property Rights, Public Policy, and Water Resource Depletion in the American West,” Heartland Environmental Economics Workshop, Sept. 20, 1999, UC-Berkeley Environmental and Resource Economics Seminar, Oct. 17, 2001.
- “Subgame Perfection in Natural Resource Extraction: An Example” U. of Michigan Natural Resources Seminar, April 7, 2000; FTC Bureau of Economics, April 27, 2000.

“Saving Existence of a Competitive Equilibrium When Set-up Costs Cannot Be Ignored,” U. of Michigan Natural Resources Seminar, Sept. 25, 1998; U. of California-Riverside, Jan. 25, 1999; U. of Calgary, Jan. 29, 1999; Wake Forest University, Feb. 3, 1999; Resources for the Future, Feb. 5, 1999.

“The Optimal Order of Natural Resource Extraction with Capacity Constraints: Partial vs. General Equilibrium,” U. of Michigan Natural Resources Seminar, March 20, 1998.

“Optimal Transition to a Capacity Constrained Backstop with Fixed Costs,” U. of Michigan Natural Resources Seminar, Sept. 19, 1997.

Teaching and professional experience

Assistant Professor, University of North Carolina, Greensboro, 2003-present. Courses: Environmental Economics (BA), Microeconomics I (MA), Microeconomics II (MA), Mathematical Economics (PhD), Intertemporal Economics (PhD), Advanced Microeconomics II (PhD).

Graduate Student Instructor, University of Michigan, 1995-97. Courses: Introductory Micro, Intermediate Micro, Ph.D. Statistics, Ph.D. Micro, American Economic History (English Composition Board course).

Research Assistant, Office of Tax Policy Research, U. of Michigan, 1995.

Summer Intern, Resources for the Future, RFF, Washington, D.C., 1994.

Research Assistant, Center for Agricultural and Rural Development, CARD, Iowa State University, 1992-93.

Mathematics Teacher, U.S. Peace Corps Botswana, Secondary Ed., 1990-91.

Other professional activities

Memberships: American Economic Association, and Association of Environmental and Resource Economists.

Referee: *American Economic Review*, *Journal of Political Economy*, *Rand Journal of Economics*, *Journal of Environmental Economics and Management*, *American Journal of Agricultural Economics*, *Canadian Journal of Economics*, *Contemporary Economic Policy*, *Energy Economics*, *Energy Journal*, *Energy Policy*, *Environmental and Resource Economics*, *Environment and Development Economics*, *International Journal of Industrial Organization*, *Natural Resource Modeling*, *Oxford Economic Papers*, and *Resource and Energy Economics*.

Reviewer: National Science Foundation, MacArthur Fellows Program, University of California Energy Institute.

Service: Phi Beta Kappa Executive Committee (October 2004 to Spring 2007)
Economics Department Seminar Series (Fall 2004 to present)
Harriet Elliott Lecture Committee (Fall 2005 to Spring 2007)