

**David Popp****Associate Professor of Public Administration**

Center for Policy Research

Syracuse University

The Maxwell School

426 Eggers Hall

Syracuse, NY 13244-1020

Ph: 315-443-2482

Fax: 315-443-1081

E-mail: dcpopp@maxwell.syr.edu

Home page: <http://faculty.maxwell.syr.edu/dcpopp/index.html>**Date of Birth:** October 30, 1970**Citizenship:** U.S.A.**Education:** Ph.D. – Yale University, Department of Economics, 1997*Fields of Concentration:* Economics of Natural Resources and the Environment  
Public Finance*Dissertation Title:* *Induced Innovation, Energy Prices, and the Environment**Dissertation Committee:* William Nordhaus, Robert Evenson, Joel Waldfogel

BA – Williams College, 1992 Major: Political Economy

**Professional Experience:**

Associate Professor of Public Administration, Syracuse University, May 2006 – present

Research Associate, National Bureau of Economics Environmental and Energy Economics Program, May 2007-present

Research Associate, National Bureau of Economics Productivity Program, September 2006 – present

Research Network Member, Energy &amp; Climate Economics Research Group, CESifo, Feb. 2009-present

Senior Research Associate, Center for Policy Research, Syracuse University, January 2006-present

Senior Research Associate, Center for Environmental Policy Administration, Syracuse University, August 2000-present

Senior Research Associate, Center for Technology and Information Policy, Syracuse University, August 2000-present

Consultant, Organisation for Economic Co-operation and Development, Environment Directorate, 2005-

Assistant Professor of Public Administration, Syracuse University, August 2000 – May 2006

Faculty Research Fellow, National Bureau of Economics Productivity Program, March 2001 – Aug. 2006

Assistant Professor of Economics, The University of Kansas, August 1997– August 2000

Research Assistant for William Nordhaus, Yale University, summer 1994–summer 1996

**Research Interests:**

Technological Change &amp; Environmental Policy, Economics of Climate Change, Economics of Technological Change

**Teaching Experience & Awards (most recent student evaluations in parenthesis):**

2005 Syracuse University Meredith Professors Teaching Recognition Award

Economics of Environmental Policy (Syracuse University) (3.83 out of 4)

Economics of Science and Technology (Syracuse University) (4.0 out of 4)

Managerial Economics for Public Administrators (Syracuse University) (3.75 out of 4)

Undergraduate Resource Economics and Environmental Policy (University of Kansas) (4.72 out of 5)

Undergraduate Public Finance (University of Kansas) (4.67/5)

Graduate Public Finance (University of Kansas) (4.63/5)

Intermediate Microeconomics (University of Kansas) (4.35/5)

Instructor Introductory Microeconomics (Yale University), Fall 1995

Teaching Assistant for Introductory Microeconomics (Yale University), Spring 1995

Teaching Assistant for Intermediate Microeconomics (Yale University), Fall 1994

Participant in ASTUTE Workshop on Technology &amp; Teaching (University of Kansas, May 1998)

**Published Papers:**

- “Exploring the Links Between Innovation and Diffusion: Adoption of NO<sub>x</sub> Control Technologies at U.S. Coal-fired Power Plants,” March 2006, NBER Working Paper #12119, forthcoming at *Environmental and Resource Economics*.
- “Renewable Energy Policies and Technological Innovation: Evidence Based on Patent Counts,” January 2008, NBER Working Paper #13760, forthcoming at *Environmental and Resource Economics* (with Nick Johnstone and Ivan Hascic).
- “Information Disclosure Policy: Does States’ Data Processing Efforts Help More than the Information Disclosure Itself?” *Journal of Policy Analysis and Management*, Winter 2010, 29(1), 163-18 (with Hyunhoe Bae and Peter Wilcoxon).
- “Does Regulation Stimulate Technical Productive Efficiency? The Effect of Air Quality Policies on the Efficiency of U.S. Power Plants,” *Energy Policy*, November 2009, 37(11), 4575-4582 (with Rachel Fleishman, Rob Alexander, and Stuart Bretschneider).
- “Endogenizing Technological Change: Matching Empirical Evidence to Modeling Needs,” *Energy Economics*, November 2008, 30(6), 2754-2770 (with William A. Pizer).
- “The Effects of Innovation Policies on Private R&D Investment: A Cross-national Empirical Study,” *Economics of Innovation and New Technology*, June 2007, 16(4), 237–253 (with Yonghong Wu and Stuart Bretschneider).
- “They Don't Invent Them Like They Used To: An Examination of Energy Patent Citations Over Time,” *Economics of Innovation and New Technology*, 15(8), November 2006, 753-776.
- “Innovation in Climate Policy Models: Implementing Lessons from the Economics of R&D,” *Energy Economics*, 28(5-6), November 2006, 596-609.
- “R&D Subsidies and Climate Policy: Is there a ‘Free Lunch’?” *Climatic Change*, 77(3-4), August 2006, 311-341.
- “Comparison of Climate Policies in the ENTICE-BR Model”, *Energy Journal*, Special Issue: Endogenous Technological Change and the Economics of Atmospheric Stabilisation, 2006, 163-174.
- “The Transition to Endogenous Technical Change in Climate-Economy Models: A Technical Overview to the Innovation Modeling Comparison Project,” *Energy Journal*, Special Issue: Endogenous Technological Change and the Economics of Atmospheric Stabilisation, 2006, 17-55 (with Jonathan Köhler, Michael Grubb, and Ottmar Edenhofer)
- “ENTICE-BR: Backstop Technology in the ENTICE Model of Climate Change,” *Energy Economics*, 28(2), March 2006, 188-222.
- “International Innovation and Diffusion of Air Pollution Control Technologies: The Effects of NO<sub>x</sub> and SO<sub>2</sub> Regulation in the U.S., Japan, and Germany,” *Journal of Environmental Economics and Management*, 51(1), January 2006, 46-71.
- “Lessons From Patents: Using Patents To Measure Technological Change in Environmental Models,” *Ecological Economics*, 54(2-3), August 2005, 209-226.

- “Uncertain R&D and the Porter Hypothesis,” *Contributions to Economic Analysis & Policy* Vol. 4: No. 1, Article 6 <http://www.bepress.com/bejeap/contributions/vol4/iss1/art6/>.
- “Institutions and Intellectual Property: The Influence of Institutional Forces on University Patenting,” Summer 2005, *Journal of Policy Analysis and Management*, 24(3), 579-598 (with Yixin Dai and Stuart Bretschneider).
- “Time In Purgatory: Determinants of the Grant Lag for U.S. Patent Applications,” *Topics of Economic Analysis & Policy* Vol. 4: No. 1, Article 29. <http://www.bepress.com/bejeap/topics/vol4/iss1/art29> (with Ted Juhl and Daniel K.N. Johnson).
- “ENTICE: Endogenous Technological Change in the DICE Model of Global Warming,” *Journal of Environmental Economics and Management*, 48(1), July 2004, 742-768.
- “Pollution Control Innovations and the Clean Air Act of 1990,” *Journal of Policy Analysis and Management*, 22(4), Fall 2003, 641-660.
- “Forced Out of the Closet: The Impact of the American Inventors Protection Act on the Timing of Patent Disclosure,” *RAND Journal of Economics*, 34(1), Spring 2003, 96-112 (with Daniel Johnson).
- “Induced Innovation and Energy Prices,” *American Economic Review*, 92(1), March 2002, 160-180.
- “Altruism and the Demand for Environmental Quality,” *Land Economics*, 77(3), August 2001, 339-349.
- “The Effect of New Technology on Energy Consumption,” *Resource and Energy Economics*, 23(3), July 2001, 215-239.
- “What is the Value of Scientific Knowledge? An Application to Global Warming Using the PRICE Model,” *The Energy Journal*, 18(1), January 1997, 1-45 (with William Nordhaus).

**Submitted Papers:**

- “Trade, Technology, and the Environment: Does Access to Technology Promote Environmental Regulation ,” revision requested from *Journal of Environmental Economics and Management*. An earlier version appeared as “Trade, Technology and the Environment: Why Do Poorer Countries Regulate Sooner?” August 2008, NBER Working Paper #14286 (with Mary Lovely).
- “Policy vs. Consumer Pressure: Innovation and Diffusion of Alternative Bleaching Technologies in the Pulp Industry,” September 2007, NBER Working Paper #13439, revision requested from *Research Policy* (with Tamara Hafner and Nick Johnstone).
- “Technology and the Diffusion of Renewable Energy,” September 2009, under review at *Energy Economics* (with Ivan Hascic and Neelakshi Medhi).
- “Where Does Energy R&D Come From? A First Look at Crowding Out from Environmentally-Friendly R&D,” October 2009, NBER Working Paper #15423, under review at *Energy Economics* (with Richard Newell).
- “International Technology Transfer for Climate Policy,” Center for Research Policy Brief 39/2008, under review at the *Review of Environmental Economics and Policy*.

**Book Chapters**

“Energy, the Environment, and Technological Change,” forthcoming in the *Handbook of Economics of Technical Change*, Bronwyn Hall and Nathan Rosenberg, eds. (with Richard Newell and Adam Jaffe).

“Innovation and Energy Prices,” in *Encyclopedia of Energy*, vol. 3, Academic Press/Elsevier, 2004, 451-458.

“Policy vs. Consumer Pressure: Innovation and Diffusion of Alternative Bleaching Technologies in the Pulp Industry,” in *Environmental Policy, Technological Innovation, and Patents*, Nick Johnstone and Ivan Hascic eds., OECD, Paris, 107-138 (also appears as Organisation for Economic Co-operation and Development Environmental Directorate report # ENV/EPOC/WPNEP(2007)3) (with Tamara Hafner).

**Conference Papers:**

“Innovation in Climate Policy Models: Implementing Lessons from the Economics of R&D,” prepared for presentation at the 2003 Energy Modeling Forum Workshop on Climate Change Impacts and Integrated Assessment, Snowmass, CO, August 5, 2003.

“Using Patents To Measure Technological Change: Lessons for Climate Policy” prepared for presentation at the Sustainable Technologies for the 21st Century Workshop, Delmenhorst, Germany, December 13, 2002.

**Reports**

“Policies for the Development and Transfer of Eco-Innovations: Lessons From the Literature,” report prepared for the OECD Global Forum on Environment on Eco-innovation, September 2009.

“International Technology Transfers for Climate Change – A Perspective on the Proposal by Zili Yang,” prepared for the Copenhagen Consensus on Climate, August 2009.

Contributing author, Intergovernmental Panel on Climate Change Mitigation of Climate Change report, chapter 11, “Mitigation from a cross-sectoral perspective”, May 2007.

“Representing Endogenous Technological Change in Models for Climate Policy Analysis: Theoretical and Empirical Considerations,” chapter 7 in *The Berkeley Climate Policy Study: Potential Economic Costs And Benefits Of Climate Change Policy In California*, November 2005 (with Ian Sue Wing).

“Using the Triadic Patent Family Database to Study Environmental Innovation,” prepared for the Organisation for Economic Co-operation and Development Environmental Directorate, report # ENV/EPOC/WPNEP/R&D(2005)2.

**Working Papers & Other Unpublished Work:**

“An Analysis of Scientists and Engineers’ Wages, R&D Expenditures, and Patents,” November 2005 (with Michael Ahn, Anna Ya Ni, and Cynthia Searcy).

“Knowledge Spillovers in Interdependent Economies,” May 2001 (with Yonghong Wu and Stuart Bretschneider).

“Environmental Taxation in a Second-Best Setting,” unpublished manuscript, Yale University, May 1995.

**Grants, Fellowships, Honors, and Awards:**

National Science Foundation grant #SES- 0825932: “DRU: An Improved Model of Endogenous Technical Change Considering Uncertain R&D Returns and Uncertain Climate Response,” September 2008-August 2011 (with Karen Fisher-Vanden and Henry Jacoby).

Daniel Patrick Moynihan Award for Outstanding Teaching, Research and Service, The Maxwell School, Syracuse University, May 2006.

US Environmental Protection Agency, “Environmental & Resource Economics Workshop: ‘Climate Policy Without Cost? Can Technology Solve the Climate Problem?’,” 2005-2006 (with Peter Wilcoxon).

US Department of Energy grant #DE-FG02-04ER63927: “Knowledge Spillovers and the Opportunity Cost of Climate Mitigation R&D” September 2004 - August 2007 (with Richard Newell).

US Department of Energy grant DE-FG02-ER63467: “International Innovation and Diffusion of Environmental Technologies: The Case of NO<sub>x</sub>,” September 2002-August 2004.

National Science Foundation grant SES-0001679: “Induced Innovation in the DICE model of Global Warming,” August 2000-July 2002.

US Department of Energy grant 593A3140217: “Induced Technological Change with Applications to Modeling of Climate-Change Policies,” 1995-97 (with William Nordhaus).

Syracuse University, The Maxwell School, Appleby-Mosher Fund: “International Innovation and Diffusion of Environmental Technologies: The Case of NO<sub>x</sub>”, 2002-2003.

University of Kansas New Faculty Research Grant: “The Timing of Disclosure and the Size of Innovation,” 1998-99.

University of Kansas IPPBR Grant Fellow, June 1998.

Yale University Tuition Fellowship & Stipend, 1993-1997.

Yale University Economics Department Dissertation Fellowship, 1993-1997.

Williams College Class of 1960 Scholar in Political Economy 1991-1992

Williams College Sloan Grant in Political Economy 1991

Graduated from Williams with Highest Honors for Senior Thesis: “Strategies for Reducing Gasoline Consumption in the United States,” May 1992.

Phi Beta Kappa

**Presentations & Seminars:**

OECD Global Forum on Environment focused on eco-innovation, Paris, France (November 2009)

Copenhagen Consensus on Climate (August 2009)

Economics of Technologies to Combat Global Warming workshop, Snowmass, CO (August 2009)

International Risk Governance Council workshop: Regulation and the enabling and constraint of technological innovation – Two sides of the same coin, Washington DC (June 2009)

Gosnell Lecture, Rochester Institute of Technology (March 2009)

American Economic Association Winter Meetings (January 2009)

EPA National Center for Environmental Economics Climate Change Economics Seminar (June 2008)

Searle Center on Law, Regulation, and Economic Growth, *Research Roundtable on Alternative Energy*, Northwestern University Law School (April 2008)

National Bureau of Economics Productivity Program Meeting (March 2008)

ERB Institute, University of Michigan (January 2008)

Association of Environmental & Resource Economics Winter Meetings, New Orleans, LA (January 2008)

Association for Public Policy Analysis and Management Fall meeting (November 2007)

Energy Modeling Forum, Snowmass, CO (August 2007)

Centre for Economic Performance, London School of Economics (June 2007)

Organized panel for APPAM Fall Research conference: “How Do We Get There From Here? Examining the Links Between Environmental Policy and Clean Technologies,” Madison, WI, (November 2006)

International Monetary Fund, Washington, DC (September 2006)

EPA Workshop: Climate Policy Without Cost? Can Technology Solve the Climate Problem?, Washington, DC (July 2006)

Sustainable Resource Use and Economic Dynamics: SURED 2006, Keynote Speaker, Ascona, Switzerland (June 2006)

Technological Change and the Environment Workshop, Rockefeller Center for Public Policy, Dartmouth College (March 2006)

University of Calgary Department of Economics (March 2006)

University of Maryland Department of Agricultural and Resource Economics (February 2006)

University of California at Berkeley Energy Institute (January 2006)

Association for Public Policy Analysis and Management Fall meeting (November 2005)

University of Ottawa Economics Department Seminar (October 2005)

Organisation for Economic Co-operation and Development Working Party on National Environmental Policy Meeting, Washington, DC (June 2005).

National Bureau of Economics Environmental Economics Working Group meeting (April 2005)

Yale University Environmental Economics Seminar (November 2004)

Association for Public Policy Analysis and Management Fall meeting (November 2004)

Stanford University Environmental Economics Seminar (May 2004)

Georgia Tech School of Public Policy (February 2004)

American Economic Association Winter Meetings (January 2004)

Rensselaer Polytechnic Institute Department of Economics Seminar (November 2003)

The Economic Dynamics of Environmental Law and Static Efficiency Conference, Syracuse NY (October 2003)

Energy Modeling Forum Workshop on Climate Change Impacts and Integrated Assessment, Snowmass, CO (August 2003)

American Economic Association Winter Meetings (January 2003)

Sustainable Technologies for the 21<sup>st</sup> Century Workshop, Delmenhorst, Germany (December 2002)

Harvard University, John F. Kennedy School of Government Seminar in Environmental Economics and Policy (October 2002)

American Environmental Economics Association Winter Meetings (January 2002)

Syracuse University Department of Economics (April 2001)

American Economic Association Winter Meetings (January 2001)

National Bureau of Economics Summer Workshop on Public Policy and the Environment (August 2000)

American Environmental Economics Association Winter Meetings (January 2000)

Heartland Environmental Workshop, Ames, IA (September 1999)

Massachusetts Institute of Technology Joint Program on the Science & Policy of Global Change (July 1999)

National Bureau of Economics Summer Workshop on Patents and Public Policy (July 1999)

National Bureau of Economics Summer Workshop on Productivity and R&D (July 1998)

National Bureau of Economics Summer Workshop on Public Policy and the Environment (August 1998)

University of Missouri at Columbia (October 1998)

National Bureau of Economics Summer Workshop on Public Policy and the Environment (August 1997)

**Students Advised:***Syracuse University Public Administration Ph.D. Students:*

Yonghong Wu	Lance Cooper
Yixin Dai	Alejandro Amezcua
Wen Wang	Robert Alexander
Tamara Hafner	Jung Eun Kim
Hyunhoe Bae	

*Syracuse University Social Sciences Ph.D. Students:*

Neelakshi Medhi

*Syracuse University Masters in International Relations Students:*

Neelakshi Medhi	Anupama Rajaraman
Koji Takahashi	Eduardo Valle
Anand Rao	Lulu Zhang
Yosuke Asai	Jonathan Gupton
Keisuke Nakashima	Sarah Jones

*Syracuse University Ph.D Committee – Other Departments:*

Mehmet S. Tosun (Economics)  
 Timm Kroeger (SUNY-ESF)  
 Carlos Moreno (SUNY-ESF)  
 Jaewon Choi (SUNY-ESF)  
 Hyunkee Bae (SUNY-ESF)  
 Natalia Trofimenko (Economics)

*Syracuse University Masters Committee – Other Departments:*

Sangjoon Park (SUNY-ESF)  
 Godfrey Ofezu (SUNY-ESF)

**Professional Service:***Professional:*

GAO Expert Panel on Climate Change Economics, 2007

Member, Environmental Protection Agency’s Advisory Council on Clean Air Compliance Analysis,  
 November 2006-2009

Associate Editor, *Energy Economics* 2004-

Editorial Council, *Journal of Environmental Economics and Management*, 2007-

Discussant: National Bureau of Economic Research “Accelerating Innovation in Energy: Lessons from other Sectors?” April 2009

“An Innovation Strategy for Climate Change Mitigation,” The Hamilton Project, Brookings Institution, June 2008

American Economic Association Annual Meeting, January 2006, January 2009

National Bureau of Economic Research Productivity Meeting, March 2004

National Bureau of Economic Research Summer Institute Environmental Economics Program, July 2003

National Bureau of Economic Research Summer Institute Productivity Program, July 2001, July 2004

Session Chair, Association for Public Policy Analysis and Management Fall meeting, November 2007

Global Economic Symposium session expert, “Energy Crisis versus Climate Change,” 2009

Referee for: *American Economic Journal: Economic Policy*, *American Economic Review*, *American Journal of Agricultural Economics*, *Australian Journal of Agriculture and Resource Economics*, *B.E. Journals in Economic Analysis and Policy*, *Climatic Change*, *Economics of Innovation and New Technology*, *Ecological Economics*, *Energy Economics*, *Energy Policy*, *Environment and Development Economics*, *Environment and Planning C*, *Environmental and Resource Economics*, *GAEL Conference on Environment, Innovation and Performance*,

*Journal of Development and Social Transformation, Journal of Economic Dynamics and Control, Journal of Economics and Management Strategy, Journal of Economic Surveys, Journal of Environment and Development, Journal of Environmental Economics and Management, Journal of Industrial Ecology, Journal of Industrial Economics, Journal of Policy Analysis and Management, Journal of Technology Transfer, Management Science, Marine Resource Economics, MIT Press, National Science Foundation, Pew Climate Change, Research Evaluation, Resource and Energy Economics, Review of Economics and Statistics, Review of Environmental Economics and Policy, Social Sciences and Humanities Research Council of Canada, The Energy Journal, UK Economic and Social Research Council, U.S. DOE Office of Science: Office of Biological and Environmental Research (BER), University of California Energy Institute*

*Syracuse University:*

Public Administration PhD Committee, 2007-

Speaker, Maxwell School Earth Day symposium, April 2006

Public Administration committee on Academic Integrity, 2006-2007

Public Administration MPA Faculty Admissions Review Committee, 2006-2007

Ad hoc committee on the direction of the Public Administration program, 2005-2006

Reviewer, ENSPIRE seed grant proposals, 2003

Environmental Economist Search Committee, 2001-2002

Steering committee overseeing The Maxwell School's Environmental Policy Speaker Series, 2001

Moderator for Career Services Network panel on public service jobs in the environmental field (3/23/01)

Outside member for Economics Department Search Committee, 2000-2001

*University of Kansas:*

Department of Economics Undergraduate Program Committee, 1997–2000

Department of Economics Resources and Information Committee, 1998–2000

Economics Department liaison to School of Business Technology Committee, 1999–2000