

## Richard B. Howarth

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Environmental Studies Program  
Dartmouth College  
Hanover, New Hampshire 03755, U.S.A.

Tel: +1 (603) 646-2752  
Fax: +1 (603) 646-1682  
E-mail: RBHowarth@Dartmouth.edu

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### EDUCATION

- 1990 Ph.D., University of California, Berkeley (Energy and Resources)  
Major Field: Natural Resource Economics  
Dissertation: "Economic Theory, Natural Resources, and Intergenerational Equity"
- 1987 M.S., University of Wisconsin-Madison (Land Resources/Energy Analysis and Policy)
- 1985 A.B., Cornell University (*summa cum laude*, Biology and Society)

### AREAS OF EXPERTISE

Discounting, sustainability, and intergenerational fairness  
Mathematical models of economy/environment interactions  
Economics of climate change  
Economics of energy efficiency  
Deliberative valuation of ecosystem services

### EMPLOYMENT

- 2007- Pat and John Rosenwald Professor, Dartmouth College
- 2003- Professor of Environmental Studies, Dartmouth College
- 1998-2003 Associate Professor of Environmental Studies, Dartmouth College
- 1998-2001 Senior Research Fellow, Section for Resource and Environmental Economics, Statistics Norway
- 1997-1998 Associate Professor of Environmental Studies, University of California, Santa Cruz
- 1993-1997 Assistant Professor of Environmental Studies, University of California, Santa Cruz
- 1993-1997 Faculty Associate, Energy and Environment Division, Lawrence Berkeley National Laboratory

- 1991-1993 Staff Scientist, Energy and Environment Division, Lawrence Berkeley National Laboratory
- 1990-1991 Postdoctoral Fellow, Energy and Environment Division, Lawrence Berkeley National Laboratory

### **HONORS, AWARDS, AND GRANTS**

- 2007-2010 “Implications of Using Robust Bayesian Analysis to Represent Diverse Sources of Uncertainty in Integrated Assessments” (with M.E. Borsuk). U.S. Environmental Protection Agency.
- 2007-2010 “Promoting Sustainable Pollutant Control Policies through Consideration of Social and Biological Indicators: An Application to Mercury Control in New England” (with M.E. Borsuk, A. King, and D. Ranco). U.S. Environmental Protection Agency.
- 2006-2009 “The Role of Natural Resources in Mitigating Political, Environmental, and Health Shocks to Extremely Poor Households in Southeastern Africa” (with F. Merry, G. Amacher, P. Epstein, N. Laporte, H. Gengenbach, and A. Plumtre). Human and Social Dynamics Program, National Science Foundation.
- 2003-2006 “The Sustainable New England Landscape” (with A. Friedland, D. Bolger, K. Fisher-Vanden, C. Sneddon, and R. Virginia). Henry Luce Foundation.
- 2003-2005 “Multi-Criteria Decision Aid for Northern Forest Communities: Participatory Tools for Balancing Ecological, Social, and Economic Considerations” (with J.D. Erickson, A. Sheldon, and M.A. Wilson). Northeastern States Research Cooperative.
- 2002-2004 “The Economics of Environmental Taxes: Using First-Best Models in a Second-Best World.” U.S. Environmental Protection Agency.
- 2001-2003 “Green Consumers and Green Producers” (with K.A. Brekke and K. Nyborg). Norwegian Research Council.
- 2000-2001 “Discounting and Risk in Climate Change Policy Analysis.” Environmental Protection Agency.
- 1998-2000 “Fundamental Issues in the Economics of Climate Change.” Pew Center on Global Climate Change.
- 1998-1999 “Voluntary Environmental Initiatives and the Economics of the Firm” (with B.M. Haddad). U.S. Environmental Protection Agency.
- 1997-2001 “Economic Growth with Endogenous Preferences between Consumption, Leisure, and the Environment” (with K.A. Brekke). Norwegian Research Council.

- 1997 “Climate Change Policy Modelling.” *Redefining Progress*.
- 1996 Honorable mention, Distinguished Teaching Awards Competition, University of California, Santa Cruz
- 1996 “Economics and Sustainable Development: Implications for Agricultural Systems.” Center for Agroecology and Sustainable Food Systems, University of California, Santa Cruz.
- 1995-1997 “Sustainability, Discounting, and Integrated Assessment.” U.S. Department of Energy, Office of Health and Environmental Research.
- 1986-1987 Wisconsin Power and Light Fellow, University of Wisconsin-Madison
- 1985-1986 University Fellow, University of Wisconsin-Madison
- 1985- Phi Beta Kappa honor society
- 1985- Phi Kappa Phi honor society

### BOOKS AND EDITED VOLUMES

- In progress K. Lee, W. Freudenburg, and R.B. Howarth. *Humans in the Landscape: An Introduction to Environmental Studies*. New York: Norton.
- 2008 C. Zografos and \_\_\_\_\_. *Deliberative Ecological Economics*. Oxford: Oxford University Press.
- 2007 John M. Gowdy and \_\_\_\_\_. Special issue on “Sustainability and Cost-Benefit Analysis.” *Ecological Economics* 637-699.
- 2005 W. Sinnott-Armstrong and \_\_\_\_\_ (editors). *Perspectives on Climate Change: Science, Economics, Politics, Ethics*. Amsterdam: Elsevier.
- 2003 \_\_\_\_\_ and D. Rothman (editors). Special issue on “Climate Change and Ecological Economics.” *International Journal of Sustainable Development* 6: 263-392.
- 2002 K.A. Brekke and \_\_\_\_\_. *Status, Growth, and the Environment: Goods as Symbols in Applied Welfare Economics*. Cheltenham: Edward Elgar.
- 2001 D.C. Hall and \_\_\_\_\_ (editors). *The Long-term Economics of Climate Change: Beyond a Doubling of Greenhouse Gas Concentrations*. Amsterdam: Elsevier.
- 1997 \_\_\_\_\_ (editor). Special issue on “Defining Sustainability.” *Land Economics* 73: 445-622.

- 1992 L. Schipper and S. Meyers with \_\_\_\_\_ and R. Steiner. *Energy Efficiency and Human Activity — Past Trends, Future Prospects*. Cambridge: Cambridge University Press.

## JOURNAL ARTICLES

- In progress \_\_\_\_\_ and M.E. Borsuk. “Discounting the Future with Uncertain Returns on Investment.”
- L. Tomassini, R. Knutti, G.K. Plattner, D. van Vuuren, T.F. Stocker, P. Reichert, \_\_\_\_\_, and M.E. Borsuk. “Uncertainty and Risk in Climate Projections for the 21st Century: Comparing Mitigation to Non-Intervention Scenarios.”
- In press F. Ackerman, S.J. DeCanio, \_\_\_\_\_, and K. Sheeran. “Limitations of Integrated Assessment Models of Climate Change.” *Climatic Change*.
- 2009 \_\_\_\_\_. “Rethinking the Theory of Discounting and Revealed Time Preference.” *Land Economics* 85: 24-40.
- 2008 \_\_\_\_\_. “Why Stern Was Right: Time Preference, Risk, and the Economics of Climate Change.” *Revue de Philosophie Économique* 9: 91-100.
- 2007 J.M. Gowdy and \_\_\_\_\_. “Sustainability and Benefit–Cost Analysis: Theoretical Assessments and Policy Options.” *Ecological Economics* 63: 637-638.
- J. Gutrich and \_\_\_\_\_. “Carbon Sequestration and the Optimal Management of New Hampshire Timber Stands.” *Ecological Economics* 62: 441-450.
- \_\_\_\_\_. “Towards an Operational Sustainability Criterion.” *Ecological Economics*. 63: 656-663.
- 2006 \_\_\_\_\_. “Optimal Environmental Taxes under Relative Consumption Effects.” *Ecological Economics* 58: 209-219.
- K. Nyborg, \_\_\_\_\_, and K.A. Brekke. “Green Consumers and Public Policy: On Socially Contingent Moral Motivation.” *Resource and Energy Economics* 28: 351-366.
- C. Sneddon, \_\_\_\_\_, and R.B. Norgaard. “Sustainable Development in a Post-Brundtland World.” *Ecological Economics* 57: 253-268.
- \_\_\_\_\_ and M.A. Wilson. “A Theoretical Approach to Deliberative Valuation: Aggregation by Mutual Consent.” *Land Economics* 82: 1-16.
- 2005 \_\_\_\_\_. “The Present Value Criterion and Environmental Taxation: The Suboptimality of First-Best Decision Rules.” *Land Economics* 81: 321-336.

- 2004 \_\_\_\_\_ . “Calibration Bias in the Analysis of Environmental Taxes.” *American Journal of Agricultural Economics* 86: 813-818.
- 2003 K.A. Brekke, \_\_\_\_\_, and K. Nyborg. “Status-Seeking and Material Affluence: Evaluating the Hirsch Hypothesis.” *Ecological Economics* 45: 25-39.
- A.J. Friedland, T. Gerngross, and \_\_\_\_\_. “Personal Decisions and Their Impacts on Energy and the Environment.” *Environmental Science and Policy* 6: 175-179.
- \_\_\_\_\_. “Discounting and Sustainability: Towards Reconciliation.” *International Journal of Sustainable Development* 6: 87-97.
- \_\_\_\_\_. “Discounting and Uncertainty in Climate Change Policy Analysis.” *Land Economics* 79: 369-381.
- \_\_\_\_\_. “Catastrophic Outcomes in the Economics of Climate Change.” *Climatic Change* 56: 257-263.
- 2002 \_\_\_\_\_ and S. Farber. “Accounting for the Value of Ecosystem Services.” *Ecological Economics*. 41: 429-429.
- M.A. Wilson and R.B. Howarth. “Discourse-Based Valuation of Ecosystem Services: Establishing Fair Outcomes through Group Deliberation.” *Ecological Economics*. 41: 431-443.
- 2001 \_\_\_\_\_ . “Intertemporal Social Choice and Climate Stabilization.” *International Journal of Environment and Pollution* 15: 386-405.
- A. Mosier, M. Bleken, P. Chaiwanakupt, J. Freney, \_\_\_\_\_, P. Matson, K. Minami, R. Naylor, and Z. Zhao-Liang. “Policy Implications of Human-Accelerated Nitrogen Cycling.” *Biogeochemistry* 52: 281-320.
- 2000 K.A. Brekke and \_\_\_\_\_. “The Social Contingency of Wants.” *Land Economics* 76: 493-503.
- K.D. Holl and \_\_\_\_\_. “Paying for Restoration: The Overlooked Question.” *Restoration Ecology* 8: 260-267.
- \_\_\_\_\_, B.M. Haddad, and B. Paton. “The Economics of Energy Efficiency: Insights from Voluntary Participation Programs.” *Energy Policy* 28: 477-486.
- \_\_\_\_\_. “Climate Change and the Representative Agent.” *Environmental and Resource Economics* 15: 135-148.
- 1998 \_\_\_\_\_ . “An Overlapping Generations Model of Climate-Economy Interactions.” *Scandinavian Journal of Economics* 100: 575-591.

- 1997 \_\_\_\_\_ . “Defining Sustainability: An Overview.” *Land Economics* 73: 445-447.
- \_\_\_\_\_. “Energy Efficiency and Economic Growth.” *Contemporary Economic Policy* 15: 1-9.
- \_\_\_\_\_. “Sustainability as Opportunity.” *Land Economics* 73: 569-579.
- 1996 K.A. Brekke and \_\_\_\_\_. “Is Welfarism Consistent with Sustainability?” *Nordic Journal of Political Economy* 23: 69-74.
- \_\_\_\_\_. “Climate Change and Overlapping Generations.” *Contemporary Economic Policy* 14(4): 100-111.
- \_\_\_\_\_. “Discount Rates and Sustainable Development.” *Ecological Modelling* 92: 263-270.
- \_\_\_\_\_. “Status Effects and Environmental Externalities.” *Ecological Economics* 16: 25-34.
- \_\_\_\_\_ and P.A. Monahan. “Economics, Ethics, and Climate Change: Framing the Debate.” *Global and Planetary Change* 11: 187-199.
- 1995 \_\_\_\_\_ . “Sustainability under Uncertainty: A Deontological Approach.” *Land Economics* 71: 417-427.
- \_\_\_\_\_ and A.H. Sanstad. “Discount Rates and Energy Efficiency.” *Contemporary Economic Policy* 13(3): 101-109.
- 1994 \_\_\_\_\_ and M.A. Winslow. “Energy Use and CO<sub>2</sub> Emissions Reduction: Integrating Pricing and Regulatory Policies.” *Energy — The International Journal* 19: 855-867.
- A.H. Sanstad and \_\_\_\_\_. “Normal Markets, Market Imperfections, and Energy Efficiency.” *Energy Policy* 22: 811-818.
- 1993 \_\_\_\_\_ and B. Andersson. “Market Barriers to Energy Efficiency.” *Energy Economics* 15: 262-272.
- \_\_\_\_\_ and R.B. Norgaard. “Intergenerational Transfers and the Social Discount Rate.” *Environmental and Resource Economics* 3: 337-358.
- R.B. Norgaard and \_\_\_\_\_. “Resolving Economic and Environmental Perspectives on the Future.” *Research in Social Problems and Public Policy* 5: 225-241.
- L. Schipper, S. Meyers, and \_\_\_\_\_. “Energy Intensities in OECD Countries: An Historical Analysis.” *International Journal of Energy Issues* 5: 76-89.

- L. Schipper, \_\_\_\_\_, B. Andersson, and L. Price. "Energy Use in Denmark: An International Perspective." *Natural Resources Forum* 17: 83-103.
- \_\_\_\_\_, L. Schipper, and B. Andersson. "Structure and Intensity of Energy Use: Trends in Five OECD Nations." *The Energy Journal* 14: 27-45.
- 1992 \_\_\_\_\_ . "Intergenerational Justice and the Chain of Obligation." *Environmental Values* 1: 133-140.
- \_\_\_\_\_ and R.B. Norgaard. "Environmental Valuation under Sustainable Development." *American Economic Review Papers and Proceedings* 80: 473-477.
- L. Schipper, \_\_\_\_\_, and E. Carllassare. "Energy Intensity, Sectoral Activity, and Structural Change in the Norwegian Economy." *Energy – The International Journal* 17: 215-233.
- 1991 \_\_\_\_\_ . "Energy Use in U.S. Manufacturing: The Impacts of the Energy Shock on Sectoral Output, Industry Structure, and Energy Intensity." *Journal of Energy and Development* 14: 175-91.
- \_\_\_\_\_. "Intergenerational Competitive Equilibria Under Technological Uncertainty and an Exhaustible Resource Constraint." *Journal of Environmental Economics and Management* 21: 225-243.
- \_\_\_\_\_. "Intertemporal Equilibria and Exhaustible Resources: An Overlapping Generations Approach." *Ecological Economics* 4: 237-252.
- \_\_\_\_\_ and L. Schipper. "Manufacturing Energy Use in Eight OECD Countries: Trends through 1988." *The Energy Journal* 12: 15-40.
- \_\_\_\_\_, L. Schipper, P.A. Duerr, and S. Strøm. "Manufacturing Energy Use in Eight OECD Countries: Decomposing the Impacts of Changes in Output, Industry Structure, and Energy Intensity." *Energy Economics* 13: 135-142.
- 1990 \_\_\_\_\_ and R.B. Norgaard. "Intergenerational Resource Rights, Efficiency, and Social Optimality." *Land Economics* 66: 1-11.
- L. Schipper, \_\_\_\_\_, and H. Geller. "United States Energy Use from 1973 to 1987: The Impacts of Improved Efficiency." *Annual Review of Energy* 15: 455-504.

**BOOK CHAPTERS AND OTHER PUBLICATIONS**

- 2008 C. Hermans, \_\_\_\_\_, T. Noordewier, and J.D. Erickson, "Constructing Preferences in Structured Group Deliberative Processes." In *Deliberative Ecological Economics* (C. Zografos and R.B. Howarth, editors). Oxford: Oxford University Press.
- \_\_\_\_\_. "Economics: Environmental." In *Encyclopedia of Environmental Ethics and Philosophy* (J.B. Callicott and R. Frodeman, editors). Farmington Hills, Michigan: Thomson Gale.
- C. Zografos and \_\_\_\_\_. "Toward a Deliberative Ecological Economics." In *Deliberative Ecological Economics* (C. Zografos and R.B. Howarth, editors). Oxford: Oxford University Press.
- 2007 \_\_\_\_\_ and R.B. Norgaard. "CO<sub>2</sub> Emissions: Getting Bang for the Buck" (letter). *Science* 318: 1865-1866.
- \_\_\_\_\_. "Cost-Benefit Analysis Meets Participatory Democracy." In *Consilience: Interdisciplinary Communications 2005/2006* (W. Østreg, editor). Oslo: Centre for Advanced Study.
- \_\_\_\_\_. "Second-Best Pollution Taxes in the Economics of Climate Change." In *Frontiers in Environmental Valuation and Policy* (J.D. Erickson and J.M. Gowdy, editors). Cheltenham: Edward Elgar.
- \_\_\_\_\_. "Sustainability and the Fair-Sharing Principle." Paper prepared for the U.S. Environmental Protection Agency, <http://www.epa.gov/sustainability/pdfs/howarth-epa-ord-paper.pdf>.
- 2006 K.A. Brekke and \_\_\_\_\_. "Two Alternative Economic Models of Why Enough Will Never Be Enough." In *Earthscan Reader on Sustainable Consumption* (T. Jackson, editor). London: Earthscan.
- B.M. Haddad and \_\_\_\_\_. "Protest Bids, Commensurability, And Substitution: Contingent Valuation And Ecological Economics." In *Handbook of Contingent Valuation* (J.R. Kahn, A. Alberini, and D. Bjornstad, editors). Cheltenham: Edward Elgar.
- 2005 K.A. Brekke, R.B. Howarth, and K. Nyborg. "Evaluating the Hirsch Hypothesis: Response." *Ecological Economics* 55: 456-458.
- \_\_\_\_\_. "Against High Discount Rates." In *Perspectives on Climate Change: Science, Economics, Politics, Ethics* (W. Sinnott-Armstrong and R.B. Howarth, editors). Amsterdam: Elsevier.

- Noble, I., J. Parikh, R. Watson, \_\_\_\_\_, R. Klein, A. Abdelkader, and T. Forsyth. "Climate Change." In *Ecosystems and Human Well-Being. Volume 3: Policy Responses* (K. Chopra, R. Leemans, P. Kumar, and H. Simons, editors). Washington: Island Press.
- 2004 \_\_\_\_\_ . "Discount Rates and the Efficiency Gap." In *Encyclopedia of Energy* (C.J. Cleveland, editor). San Diego: Elsevier Science.
- \_\_\_\_\_ . "Fuel Economy Standards" (comment). *Journal of Economic Perspectives* 18: 272-273.
- \_\_\_\_\_, B.M. Haddad, and B. Paton. "Energy Efficiency and Greenhouse Gas Emissions: Correcting Market Failures Using Public Voluntary Programs." In *Voluntary Approaches in Climate Policy* (A. Baranzini and P. Thalmann, editors). Cheltenham: Edward Elgar. (This is an updated and extended version of Howarth *et al.*, *Energy Policy* 28: 477-486, 2000)
- 2003 \_\_\_\_\_ . "Climate Change." In *Online Encyclopedia of Ecological Economics* (E. Neumayer, editor). International Society for Ecological Economics, <http://www.ecoeco.org/publica/encyc.htm>.
- \_\_\_\_\_ and D. Rothman. "Editors' Introduction." *International Journal of Sustainable Development* 6: 263-264.
- 2002 \_\_\_\_\_ . "Sustainable Development: Principles." In *Encyclopedia of Global Change* (A.S. Goudie, editor). New York: Oxford University Press.
- P. Vellinga, \_\_\_\_\_, and J. Gupta. "Editorial: Improving Global Environmental Governance." *International Environmental Agreements* 2: 293-296.
- 2001 \_\_\_\_\_ . "Climate Rights and Economic Modeling." In *The Long-term Economics of Climate Change: Beyond a Doubling of Greenhouse Gas Concentrations* (D.C. Hall and R.B. Howarth, editors). Amsterdam: Elsevier.
- \_\_\_\_\_ and D.C. Hall. "Beyond A Doubling: Issues in The Long-Term Economics of Climate Change." *The Long-term Economics of Climate Change: Beyond a Doubling of Greenhouse Gas Concentrations* (D.C. Hall and R.B. Howarth, editors). Amsterdam: Elsevier.
- P. Vellinga, J. Gupta, and \_\_\_\_\_. "Editorial." *International Environmental Agreements* 1: 1-5.
- 2000 S.J. DeCanio, \_\_\_\_\_, A.H. Sanstad, S.H. Schneider, and S.L. Thompson (editors). *New Directions in the Economics and Integrated Assessment of Global Climate Change*. Washington: Pew Center on Global Climate Change.

- \_\_\_\_\_. “Climate Change and Relative Consumption.” In *Society, Behaviour, and Climate Change Mitigation* (E. Jochem, D. Bouille, and J. Sathaye, editors). Dordrecht: Kluwer.
- 1998 \_\_\_\_\_ . “Sustainability, Uncertainty, and Intergenerational Fairness.” In *Sustainable Development: Concepts, Rationalities and Strategies* (S. Faucheux, J. van der Straaten, and M. O'Connor, editors). Dordrecht: Kluwer.
- B.M. Haddad, \_\_\_\_\_, and B. Paton. “Energy Efficiency and the Theory of the Firm.” In *ACEEE 1998 Summer Study on Energy Efficiency in Buildings*.
- 1997 D. Goodman and \_\_\_\_\_. “International Trade and Sustainable Development.” In *Flash Points in Environmental Policymaking: Controversies in the 1990s* (S. Kamieniecki, G.A. Gonzalez, and R.O. Vos, editors). Ithaca, New York: SUNY Press.
- \_\_\_\_\_. “Comment.” In *Property Relations, Incentives, and Welfare* (J. Roemer, editor). New York: St. Martin’s.
- 1996 \_\_\_\_\_ . “Discount Rates and Sustainable Development: Reply.” *Ecological Modelling* 92: 271-272.
- 1995 \_\_\_\_\_ and R.B. Norgaard. “Intergenerational Choices under Global Environmental Change.” In *Handbook of Environmental Economics* (D. Bromley, editor). Oxford: Blackwell Publishers.
- 1994 A.H. Sanstad and \_\_\_\_\_. “Consumer Rationality, Energy Analysis, and Policy.” In *ACEEE 1994 Summer Study on Energy Efficiency in Buildings*.
- 1993 \_\_\_\_\_ . “Environmental Risks and Future Generations: Criteria for Public Policy.” In *Clean Water and the American Economy. Volume 2. Ground Water*. Washington: U.S. Environmental Protection Agency.
- \_\_\_\_\_, B. Andersson, and L. Schipper. “Energy Use and Carbon Dioxide Emissions in Norway and the U.S.: Changes between 1973 and 1988.” In *Global Climate Change: European and American Policy Responses* (J. Trilling and S. Strøm, editors). Berkeley: Center for Western European Studies.
- \_\_\_\_\_, P.A. Monahan, and J. Sathaye. “Three Frameworks for Assessing Cost-Effectiveness for Alternative Climate Policy Goals.” Lawrence Berkeley Laboratory, LBL-33583.
- 1992 \_\_\_\_\_ and P.A. Monahan. “Economics, Ethics, and Climate Policy.” Stockholm Environment Institute, Stockholm.

R.B. Norgaard with \_\_\_\_\_. “Economics, Ethics, and the Environment.” In *The Energy-Environment Connection* (J. Hollander, editor). Washington: Island Press.

L. Schipper, \_\_\_\_\_, and B. Andersson. “Energy Use in Denmark: An International Perspective.” Lawrence Berkeley Laboratory, LBL-32362.

1991 \_\_\_\_\_ . “An Intergenerational Competitive Equilibrium Model of a Renewable Resource Economy.” In *Sustainability as Intergenerational Equity: The Challenge to Economic Thought and Practice* (by R.B. Norgaard). World Bank Discussion Paper, Washington, D.C.

R.B. Norgaard and \_\_\_\_\_. “Sustainability and Discounting the Future.” In *Ecological Economics: The Science and Management of Sustainability* (R. Costanza, editor). New York: Columbia University Press.

R.B. Norgaard and \_\_\_\_\_. “Sustainability and Intergenerational Environmental Rights: Implications for Benefit-Cost Analysis.” In *Economic Issues in Global Change: Agriculture, Forestry, and Natural Resources* (J. Reilly and M. Anderson, editors). Boulder: Westview Press.

1990 L. Schipper, \_\_\_\_\_, and H. Geller. “Les Gains D'Efficacite Energetique Aux Etats-Unis S'Epuisent-Ils Apres 1985?” (French translation by B. Chateau). In *Energie Internationale 1990-1991*. Paris: Economica.

L. Schipper, \_\_\_\_\_, and D. Wilson. “A Long-Term Perspective on Norwegian Energy Use.” Lawrence Berkeley Laboratory, LBL-27295.

## BOOK REVIEWS

2008 \_\_\_\_\_ . Review of *Joint Production and Responsibility in Ecological Economics*, by S. Baumgärtner, M. Faber, and J. Schiller. *Environmental Values* 17: 111-113.

2007 \_\_\_\_\_ . “Adaptive Management and the Philosophy of Environmental Policy.” Essay review of *Sustainability: A Philosophy of Adaptive Ecosystem Management*, by B.N. Norton. *Perspectives in Biology and Medicine* 50: 453-458.

\_\_\_\_\_ . Review of *Emissions Trading: Principles and Practice*, by T.H. Tietenberg. *Ecological Economics* 61: 576-577.

2006 \_\_\_\_\_ . Review of *The Institutional Economics of Market-Based Climate Policy*, by E. Woerdman. *Ecological Economics* 59: 395-397.

2005 \_\_\_\_\_ . Review of *Price, Principle, and the Environment*, by M. Sagoff. *Land Economics* 81: 587-591.

- 2002 \_\_\_\_\_ . Review of *The Origins of Ecological Economics: The Bioeconomics of Georgescu-Roegen*, by K. Mayumi. *Land Economics* 78: 624-626.
- 2001 \_\_\_\_\_ . Review of *The Economics of Global Climatic Change*, by P.K. Rao (M.E. Sharpe, 2000). *American Journal of Agricultural Economics* 83: 1094-1095.
- 1999 \_\_\_\_\_ . Review of *Economics and Policy Issues in Climate Change*, edited by W.D. Nordhaus (Resources for the Future, 1998). *GSA Today* 9: 13-14.
- \_\_\_\_\_ . Review of *Economy and Ecosystems in Change: Analytical and Historical Approaches*, edited by J. van den Bergh and J. van der Straaten (Edward Elgar, 1997). *Ecological Economics* 30: 353-355.
- 1998 \_\_\_\_\_ . Review of *Introduction to Ecological Economics*, by R. Costanza, J. Cumberland, H. Daly, R. Goodland, and R. Norgaard (St. Lucie Press, 1997). *Ecology* 79: 2969-2970.
- \_\_\_\_\_ . Review of *Measuring Sustainable Development*, by R. Dubourg, K. Hamilton, M. Munasinghe, D. Pearce, and C. Young (Edward Elgar, 1997). *Environment and Planning A* 30: 2260-2261.
- \_\_\_\_\_ . Review of *Time Discounting and Future Generations*, by E. Kula (Quorum Books, 1997). *Environment and Planning A* 30: 2085-2086.
- 1993 \_\_\_\_\_ . Review of *Real-Life Economics: Understanding Wealth Creation*, edited by P. Ekins and M. Max-Neef (Routledge, 1992). *Ecological Economics* 8: 185-188.
- \_\_\_\_\_ . Review of *Economic Valuation of Natural Resources: Issues, Theory, and Applications*, edited by R.L. Johnson and G.V. Johnson (Westview Press, 1990). *Society and Natural Resources* 6: 97-98.
- 1989 B.A. Atkinson and \_\_\_\_\_ . Review of *Social Costs of Energy Consumption: External Effects of Electricity Generation in the Federal Republic of Germany*, by O. Hohmeyer (Springer-Verlag, 1988). *Sun World* 13: 94-95.
- 1988 \_\_\_\_\_ and R.B. Norgaard. Review of *Energy and Resource Quality*, by C.A.S. Hall, C.J. Cleveland, and R. Kaufmann (Wiley-Interscience, 1986). *Land Economics* 64: 311-313.

## TEACHING

*Dartmouth College:*

Environmental Studies 3, "Environment and Society," 1999-2004, 2007-2008

Environmental Studies 12, "Energy and the Environment," 2002-2004

Environmental Studies 50, "Environmental Problem Analysis and Policy Formulation," 2000-2001, 2005-2006

Environmental Studies/Economics 55, "Natural Resource and Ecological Economics," 1999-

Environmental Studies 80/Public Policy 84, "Valuing the Environment," 2007

*Dartmouth Senior Thesis Students:*

Kathleen Onufer, Class of 2008

Lauren Smith, Class of 2008

Susie Chung, Class of 2007

Kathryn Clark, Class of 2007

Anne O'Hagen, Class of 2006

David Bradt, Class of 2005

Shannon Rogers, Class of 2004

Hannah Jacobs, Class of 2002

J.R. Lederer, Senior Fellow, 2002

Lauren Hierl, Class of 2001

Olivia Carpenter, Class of 2000

William Finnegan, Class of 2000

*Ph.D. Students:*

Christos Zografos, Ph.D. in Environmental Sciences, Universitat Autònoma de Barcelona, 2008

Kamran Zendehtdel, Ph.D. in Applied Biological Sciences, University of Ghent, 2008

Caroline Hermans, Ph.D. in Natural Resources, University of Vermont, 2005

Bruce Paton, Ph.D. in Environmental Studies, U.C. Santa Cruz, 2001

Gabriel Labbate, Ph.D. in Environmental Studies, U.C. Santa Cruz, 2000

*University of California, Santa Cruz:*

Environmental Studies 25, "Political Economy and the Environment," 1994-1998

Environmental Studies 110, "Political Economy and Sustainability," 1994-1996

Environmental Studies 141, "Natural Resource Economics," 1993-1998

Environmental Studies 195, "Senior Thesis Group," 1994-1995

Environmental Studies 196, "Topics in Ecological Economics," 1997

Environmental Studies 240, "Public Policy and Conservation," 1998

Environmental Studies 291, "Advanced Readings in Environmental Studies," 1996-1998

*Teaching Assistantships:*

1988 "Introduction to Environmental Science" (Environmental Science 10, University of California, Berkeley)

1986 "Energy Resources" (Geology/Environmental Studies 411, University of Wisconsin-Madison)

1985 "Short Course in Systems Ecology" (Biological Sciences 498, Cornell University)

**ADMINISTRATIVE SERVICE**

*Dartmouth College:*

2009- Committee on Investor Responsibility

2007-2010 Chair, Council on Benefits

2006-2007 Committee on Organization and Policy

2003-2004 Chair, Committee on the Faculty of Arts and Sciences

2001-2003 Committee on the Faculty of Arts and Sciences

2001-2004 Council on Sponsored Activities

1999-2000 Co-Chair, Environmental Studies/Geography Faculty Recruitment Committee

*University of California, Santa Cruz:*

1997-1998 Chair, Curriculum Committee, Department of Environmental Studies

1996-1997 Chair, Environmental Politics and Policy Search Committee, Department of Environmental Studies

1996-1997 Curriculum Committee, Department of Environmental Studies

1994-1998 Academic Standing Committee, College Eight

1994-1998 Computer Advisory Committee, Social Sciences Division

1993-1996 Graduate Committee, Department of Environmental Studies

## **MEMBERSHIPS IN PROFESSIONAL SOCIETIES**

American Economics Association  
Association for Environmental and Resource Economics  
International Society for Ecological Economics  
United States Society for Ecological Economics

## **PROFESSIONAL ACTIVITIES**

2008- Editor-in-Chief, *Ecological Economics*

2008- Member, Outer Continental Shelf Scientific Committee, U.S. Department of the Interior

2008- Member, Board of Directors, International Society for Ecological Economics

2008- Member, Board of Directors, Redefining Progress

2008- Editorial Board Member, *Environmental Justice*

2007- Editorial Board Member, *Land Economics*

2007 Member, General Accounting Office Expert Panel on Climate Change

2006 Lecturer, Summer School on “Adaptation and Mitigation: Responses to Climate Change,” National Center of Competence in Research, Grindelwald, Switzerland

2005-2007 Editorial Board Member, *Environmental Values*

2005-2006 Consultant, College Board AP Best Practices Course Design in Environmental Science, Educational Policy Improvement Center

2005 Fellow, Centre for Advanced Study, Norwegian Academy of Science and Letters

2005 Panelist, STAR Graduate Fellowship Program, U.S. Environmental Protection Agency

2004 Visiting Researcher, Socio-Economic Research Programme, Macaulay Land Use Research Institute, Aberdeen, Scotland

2004 Member, Scientific Committee, International Society for Ecological Economics Biennial Conference

- 2003 Visiting Scholar, Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory
- 2002-2005 Lead Author, Climate Change Working Group, Millennium Ecosystem Assessment
- 2002 Panelist, Corporate Environmental Behavior STAR Grants Program, U.S. Environmental Protection Agency
- 2002 Visiting Scholar, Center for Environment and Development, University of Oslo
- 2001- Co-Editor, *Advances in the Economics of Environmental Resources*
- 2001-2003 Member, Board of Directors, United States Society for Ecological Economics
- 2000 Member, Publications Committee, International Society for Ecological Economics
- 2000 Outside Reviewer, Intergovernmental Panel on Climate Change
- 1999- Associate Editor, *International Environmental Agreements: Politics, Law, Economics*
- 1998-2007 Editorial Board Member, *Ecological Economics*
- 1998-1999 Member, Working Group on the Policy Implications of Human-Accelerated Nitrogen Cycling, International Scientific Committee on Problems of the Environment
- 1998- Member, Working Group on Ecosystem Services and Natural Capital, National Center for Ecological Analysis and Synthesis
- 1998- Editorial Board Member, *International Journal of Sustainable Development*
- 1995 Guest Researcher, Economy and Ecology Program, Statistics Norway
- 1994-1995 Member, National Academy of Public Administration Panel on Balancing Risks and Benefits Fairly across Generations
- 1994-2006 Editorial Board Member, *Environment and Development Economics*
- 1993- Editorial Board Member, *Contemporary Economic Policy*
- 1993-1998 Faculty Affiliate, Energy and Resources Group, University of California, Berkeley
- 1991 Consultant on intergenerational equity and natural resources, the World Bank

- 1989            Consultant on industrial energy use, McKinsey and Company
- 1986            Energy Engineer and Policy Specialist, State of Wisconsin Rental Weatherization Program

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U.S. National Science Foundation

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