
DALE SCOTT ROTHMAN

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PROFILE

Building upon an interdisciplinary educational background, I have been pursuing research and teaching in the areas of integrated assessment and ecological economics for nearly two decades. I have held positions in the USA, Canada, the Netherlands, and the United Kingdom. My recent research has focused on the application of participatory scenario analysis, integrated modelling, and other foresight tools to issues of sustainable development across multiple issues and at multiple scales. I have been involved in specific work on the impacts of climate change, the environmental Kuznets' curve hypothesis, sustainability indicators, health and the environment, and the future of infrastructure.

CURRENT ACTIVITIES

I am currently have a joint appointment as an Associate Professor in the Josef Korbel School of International Studies, at the University of Denver and as the Senior Scientist for the Frederick S. Pardee Center for International Futures, which is located within the School. I teach two graduate level courses: 1) The Environment, the Economy, and Human Wellbeing, and 2) Systems Thinking for Social Scientists. I am currently involved in research projects through the Pardee Center related to enhancing the quantitative representation of socioeconomic scenarios for climate research; the future of global fisheries; the expected benefits of environmental health interventions related to access to clean water and sanitation and modern fuels; and the potential social, economic, and environmental effects of extreme extensions of life expectancy.

PROFESSIONAL EXPERIENCE

Associate Professor and Senior Scientist *since Sep 2009*
Frederick S. Pardee Center for International Futures, Josef Korbel School of International Studies,
University of Denver *Denver, Colorado*

- * providing general scientific support to the International Futures project, particularly related to the representation of environmental systems and their connection to social and economic systems
- * developing and executing projects related to integrated assessment of social and environmental systems
- * developing and delivering courses related to Environment & Development and Systems Thinking
- * advising students, including serving on thesis and dissertation committees
- * served as the chair of the research and curriculum committee of the University of Denver's Sustainability Council

Research Associate and Adjunct Faculty *Aug 2008-Aug 2009*
Frederick S. Pardee Center for International Futures, Josef Korbel School of International Studies,
University of Denver *Denver, Colorado*

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- * as a research associate: 1) contributed to the third volume of Patterns of Potential Human Progress: Improving Global Health; 2) undertook a project on exploring projections of current Millennium Development Goal (MDG) goals and future MDG targets; and 3) explored extensions to the International Futures modelling system to address environmentally related issues
- * as an Adjunct Faculty, taught the Master's level course INTS-4397-1: Environment and Human Well-Being

Associate

July 2008-June 2010

International Institute for Sustainable Development

Winnipeg, Canada

- * this was a continuation of my position as a Senior Research with IISD, but now as an independent contractor on a project basis;
- * projects included: 1) scenario development to assist in resource planning for Manitoba Hydro, 2) exploration of the nature of internet governance in global scenarios and the implication for sustainability, and 3) developing and facilitation participatory scenario exercises for the World Bank as part of its Economics of Adaptation to Climate Change program

Independent Contractor and Sole Proprietor

July 2008-Aug 2009

DSR Sustainability Research

Winnipeg, Canada

- * projects included: 1) preparation of quantitative results for scenario chapter of Global Environmental Outlook for Latin America & the Caribbean for the UNEP Regional Office for Latin America; 2) preparation of report North American Environmental Outlook to 2030: Review of existing research for the North American Commission for Environmental Cooperation; and 3) following on from the second, the preparation of a discussion paper integrating the conclusions of this and an earlier CEC initiatives comparing the key environmental issues/trends against the highest potential policy domains for continental cooperation.

Senior Researcher

June 2006 - June 2008

International Institute for Sustainable Development

Winnipeg, Canada

- * assisted the Director of the Measurement and Assessment program with strategic planning, fundraising and program related outreach
- * project management
- * delivery of training programs on sustainable development measurement and scenario analysis

Key Project activities

- * Review of Canadian Environmental Sustainability Indicators initiative (project leader)
- * Canadian Environment Outlook (overall process design and project leadership)
- * Global Environment Outlook-4 (Coordinating Lead Author of Scenario Chapter)
- * Review of environmental projections for North America for the CEC (co-project leader)
- * SENSOR - Sustainability Impact Assessment: Tools for Environmental, Social and Economic Effects of Multifunctional Land Use in European Regions (contributor on use of social indicators and public participation in impact assessment)
- * Prospects for Human Development - Volume 1: Reducing Global Poverty (contributed exploration of links between environment & natural resources and poverty)
- * Integrated Land Management Modelling: A component of Natural Resources Canada's GEOConnections program (technical support to secretariat)
- * Scenario development to assist in resource planning for Manitoba Hydro (senior consultant)
- * Review of micro simulation, agent-based, and participatory modelling for potential use by Agriculture and Agri-Food Canada (project leader).

Senior Researcher

July 2003-March 2006

Macaulay Institute

Aberdeen, United Kingdom

- * Acting Science Leader of Socio-Economics Research Programme
- * Contribute to and manage projects for the Scottish Executive Environment and Rural Affairs Department (SEERAD), UK Department of Environment, Food and Rural Affairs (Defra), European Commission (EC), and United Nations Environment Programme (UNEP)
- * Line manage junior researchers
- * Member of IPCC Task Group on New Emission Scenarios

Key Project activities

- * UNEP Global Environmental Outlook 4 (Coordinating Lead Author of Scenario Chapter)
- * SENSOR - Sustainability Impact Assessment: Tools for Environmental Social and Economic Effects of Multifunctional Land Use in European Regions (contributor on use of social indicators and public participation in impact assessment)
- * COST A22: Exploring New Ways to Explore the Future (member of Management Committee and first Chair)
- * SURPLUS - Appraisal of Sustainable Rural Policy and Land Use: Scoping Study for Defra (co-Project leader)
- * Achieving Sustainable Catchment Management: Developing Integrated Approaches and Tools to Inform Future Policies (leader of Work Package)

Senior Scientist

July 2000-June 2003

International Centre for Integrative Studies, University of Maastricht

Maastricht, the Netherlands

- * Co-manager of Integrated Assessment Studies cluster
- * Contribute to and manage projects for the European Commission, United Nations Environment Programme, and other organizations
- * Supervise master's students and junior researchers
- * Occasional lecturing

Key Project activities

- * MedAction - Land-use change and desertification in the northern Mediterranean (leader of one of 4 main modules)
- * Energy and Environmental Scenarios for Europe with the Netherlands Central Planning Bureau and National Institute for Public Health and the Environment (member of core research team)
- * Millennium Ecosystem Assessment (Lead Author of Uncertainty chapter in Responses Working Group)
- * UNEP Global Environmental Outlook 3 (member of core team and principle author of Chapter 4 – Outlook 2002-2032)
- * VISIONS – Integrated Visions for a Sustainable Europe (member of core research team)

Assistant Professor

September 1998 – February 2000

Columbia University Biosphere 2 Center

Oracle, AZ, USA

- * Faculty member with Earth Semester Program as part of Columbia Earth Institute
- * Lead Columbia researcher in cooperative program with Volvo Corporation. Initial efforts aimed at developing curriculum material on consumption, technology, and industrial ecology.

NWO Research Fellow

May 1999-August 1999

International Centre for Integrative Studies, University of Maastricht

Maastricht, the Netherlands

- * Senior Research Associate
- * Contributed to European Commission's DG-XII project – Visions for a Sustainable Europe and project for British Energy on the economic impacts of climate change.
- * Supervised junior researchers.

Research Associate and NSERC Post-Doctoral Fellow

July 1995-August 1998

Environmental Adaptations Research Group (Environment Canada) and

Vancouver, B.C., Canada

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Sustainable Development Research Institute (University of British Columbia)

- * National Science and Engineering Research Council of Canada Fellowship for research on long-term adaptive response to environmental constraint including exploration of sustainable society scenarios.
- * Lecturer in Department of Geography
- * Specific research on economic growth and environmental degradation; integrated assessment of global change; socio-economic impacts of climate change; use of science in policy-making; modelling of coevolution of social and ecological systems.
- * Assist in proposal writing, student advising, and workshop organization.

Research Associate in Sustainability and Environmental & Resource Economics *June 1993-June 1995*
World Resources Institute: The 2050 Project and Program in Economics and Population *Washington, D.C., USA*

- * Member of the core staff of the 2050 Project, a project jointly administered by the World Resources Institute, the Brookings Institution, and the Santa Fe Institute with contributions from other institutions around the world.
- * Coordinate research activities of cooperating institutions and individuals.
- * Explore methods of scenario development and develop scenarios to analyze possible futures.
- * Assist in research activities related to the 2050 Project.
- * Work with the program in Economics and Population to develop productivity measures for the pulp and paper industry that include benefits from pollution reduction.

Environmental & Resource Economist *Summer 1991*
International Institute for Applied Systems Analysis, Young Scientists Summer Program *Laxenburg, Austria*

- * Participated in the Environmentally Compatible Energy Strategies Project within the Environment Program. Analyzed the potential for reduction of energy use and pollutant emissions in steel production and other selected industries.

Assistant Environmental & Resource Economist *Summer 1984, 1987-1989*
Argonne National Laboratory, Energy and Environmental Systems Division *Argonne, IL, USA*

- * Task Manager for the development of electric utility databases.
- * Performed analyses and research in support of economic and energy modeling for the National Acid Precipitation Assessment Program and Department of Energy's Clean Coal Technology (DOE/CCT) program.
- * Prepared reports on Global Climate Change for DOE Fossil Energy (DOE/FE).

Research Associate *1986-1987*
University of Wisconsin-Engineering Extension, Disaster Management Center *Madison, WI, USA*

- * Researched use of simulation in management of natural and technological disasters.
- * Aided in training course for the UN High Commission on Refugees.

Environmental Engineer *1984-1985*
U.S. EPA Motor Vehicle Laboratory, Standards Development and Support Branch *Ann Arbor, MI, USA*

- * Performed research on air pollution from automobiles in support of Regulatory Impact Analyses and technical reports.
- * Worked with transportation and pollution models.

Student Intern *Summer 1983*
Board of Alderman, City Hall *Louisville, KY, USA*

- * Served as intern for Alderman Allan Steinberg in conjunction with MIT Undergraduate Research Opportunity Program and Department of Political Science.
- * Research centered on local environmental issues, specifically solid waste disposal and air pollution.

- * Made presentations before Mayor and Board of Aldermen.

ACADEMIC EXPERIENCE

Ph.D. Environmental and Resource Economics

1989-1993

Cornell University, Department of Agricultural & Resource Economics

Ithaca, NY, USA

- * Minor Fields: Applied Econometrics and Quantitative Methods, Mathematical Ecology
- * Dissertation areas: 1) economics of climate change and climate change policy, 2) cross-country comparisons of price and income elasticities for energy demand, 3) the role of poverty and inequality in resource use and environmental degradation, a behavioral modelling approach
- * Sage Graduate Fellowship, 1989-1990

M.S. (ABT) Land Resources

1985-1987

University of Wisconsin-Madison, Institute for Environmental Studies

Madison, WI, USA

- * Coursework in resource economics, geography, and environmental sciences and policy.
- * WARF Fellowship 1985-1986

S.B. Environmental Earth Sciences

1980-1984

Massachusetts Institute of Technology, Dept. of Earth, Atm., and Plan. Sciences

Cambridge, MA, USA

- * Undergraduate Research Opportunities Program participant: Comparison of Indoor-Outdoor Air Pollution Concentrations (1983-1984), Environmental Policy in Local Governments (Summer 1983)
- * Co-Captain of Varsity Baseball Team

ADDITIONAL TEACHING EXPERIENCE

University of Maastricht

- * Lecturer and Course Co-ordinator: Ecology and Economics (Fall 2001, 2002)

University of British Columbia, Department of Geography

- * Lecturer: Geography of Natural Hazards (Fall 1997)
- * Lecturer: Geography and Resource Analysis (Spring 1998)

Cornell University

- * Lecturer: Introductory Concepts of Mathematical Economics (Summer 1992)
- * Teaching Assistant: Environmental and Natural Resource Economics (Spring 1991)
- * Teaching Assistant: Mathematical Programming (Fall 1990)

Miscellaneous

- * Invited Lecturer: Training course for the European Union's 6th Framework project SCENES (Water Scenarios for Europe and Neighbouring States) (Fall 2007)
- * SENSE (Netherlands Research School for the Socio-Economic and Natural Sciences of the Environment)
 - * Invited Lecturer - S400 Issues in Quantitative Analysis and Modelling: Energy, Materials and Waste (Fall 2005)
 - * Invited Lecturer - S300 Integrated Assessment of Global Environmental Change (Spring 2003)
- * Invited Lecturer: TIAS (The Integrated Assessment Society) Summer School on Integrated Assessment for Environmental Management (Summer 2004)
- * Invited Lecturer/Facilitator: EU Advanced Summer Course in Integrated Assessment Methodology (Summer 2003)

PHD DISSERTATION AND MS/MA THESIS SUPERVISION

- * Qing Liu (PhD, expected 2016), University of Denver, Department of Geography and Environment
- * Amir Siraj (PhD, 2015), University of Denver, Department of Geography and Environment
- * Kausiki Mukhopadhyay (PhD, 2014), University of Denver, Josef Korbel School of International Studies
- * Sarah Nuernberger (MA, 2012), University of Denver, Josef Korbel School of International Studies
- * Marie Doehne (MA, 2003), University of Maastricht, International Centre of Integrative Studies
- * Katrin Fuhrmann (MA, 2003), University of Maastricht, International Centre of Integrative Studies
- * Bjorn Caspers (MA, 2002), University of Maastricht, Department of Quantitative Economics
- * Svein Erik Moen (MA, 2001) The European Inter-University Association on Society, Science and Technology
- * Igor Matutinović (PhD, 1999) University of Zagreb, Faculty of Economics

GRANT/PROJECT INCOME AND ACTIVITY

(where project leader or held other significant role)

- * Current proposal to NSF Coupled Natural and Human Systems (Co-PI): CNH-L: INTEGRated Research on Urbanization, Resource Use and Risk along the Front Range (INTEGRATOR)"
- * Sep 2015 – Aug 2019: The potential for aquaculture in Lake Victoria and implications for wild fisheries and fish commodity markets. NSF Coupled Natural and Human Systems (Co-PI): CNH-L (\$1.8 million US)
- * Jan – Dec 2015: Strengthening Water for People’s donor and program stakeholder engagement through water and sanitation forecasting (PI); Water for People (\$30K US)
- * Oct 2008 – Dec 2008: Preparation of technical report and discussion paper integrating the conclusions of two CEC 2008 initiatives and present a matrix comparing the key environmental issues/trends against the highest potential policy domains for continental cooperation; for the North American Commission for Environmental Cooperation (\$25K Can)
- * Jul 2008 – Oct 2008: Preparation of background report North American Environmental Outlook to 2030: Review of existing research for the North American Commission for Environmental Cooperation (\$14K Can)
- * Jun 2008 – Sep 2008: Preparation of quantitative results for scenario chapter of Global Environmental Outlook for Latin America & the Caribbean (\$3.3K US)
- * Jan 2008 – Apr 2008: Review of micro simulation, agent-based, and participatory modelling for potential use by Agriculture and Agri-Food Canada (project leader, \$10K Can)
- * Dec 2007 – Apr 2008: Review of Canadian Environmental Sustainability Indicators initiative (project leader, \$35K Can)
- * Nov 2007 – Apr 2008: Review of environmental projections for North America and production of discussion paper for June 2008 workshop of the North American Commission for Environmental Cooperation (co-project leader, \$35K Can)
- * Oct 2007 – Nov 2009: Integrated Land Management Modelling: A component of Natural Resources Canada’s GEOConnections program (technical support to secretariat, \$150K Can)
- * Apr 2007 – Nov 2007: Prospects for Human Development - Volume 1: Reducing Global Poverty (contributor exploration of links between environment & natural resources and poverty, \$10K US)
- * Jun 2006 – Mar 2008: Canadian Environment Outlook (overall process design and project leadership, \$100K Can)

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- * Dec 2004 – Nov 2008: SENSOR - Sustainability Impact Assessment: Tools for Environmental, Social and Economic Effects of Multifunctional Land Use in European Regions (contributor on use of social indicators and public participation in impact assessment, €141K)
- * Jun 2004 – Oct 2007: Global Environment Outlook-4 (Coordinating Lead Author of Scenario Chapter, approximately \$1 million US)
- * Dec 2003 – May 2005: SURPLUS - Appraisal of Sustainable Rural Policy and Land Use: Scoping Study for Defra (co-Project leader, £50K)
- * Dec 2002 – May 2005: COST A22: Exploring New Ways to Explore the Future (member of Management Committee and first Chair, €115K)

PUBLICATIONS

Journal Articles In Press or in Preparation

Rothman, Dale S., M.T. Irfan, B. B. Hughes, Eli S. Margolese-Malin, Jonthan D. Moyer (to be submitted). Challenges to Achieving Universal Access to Infrastructure: Lessons from a Global Integrated Model

Kuhn, R., Rothman, Dale S., S. Turner, J. Solórzano, B.B. Hughes (in second round of review). Beyond Population Attributable Risk: A Scenario-based dynamic forecast of the avoidable burden of disease associated with household air pollution Health Affairs.

Siraj, Amir S., Menno J. Bouma, Mauricio Santos-Vega, Asnakanew K. Yeshiwondim, Dale S. Rothman, Damtew Yadeta, Paul C. Sutton, Mercedes Pascual (in second round of review). Temperature and population density determine reservoir regions of seasonal persistence in highland malaria Proceedings of the Royal Society B.

Journal Articles Published

Hughes, B. B., R. Kuhn, E. S. Margolese-Malin, Dale S. Rothman, and J. R. Solórzano. 2015. *Opportunities and Challenges of a World with Negligible Senescence* Technological Forecasting and Social Change 99 (October): 77–91. doi:10.1016/j.techfore.2015.06.031.

O'Neill, B. C., E. Kriegler, K. L. Ebi, E. Kemp-Benedict, K. Riahi, Dale S. Rothman, B. J. van Ruijven, et al. *The Roads Ahead: Narratives for Shared Socioeconomic Pathways Describing World Futures in the 21st Century* Global Environmental Change. doi:10.1016/j.gloenvcha.2015.01.004.

Rothman, Dale S., P. Romero-Lankao, V. J. Schweizer, and B. A. Bee (2014). *Challenges To Adaptation: A Fundamental Concept for the Shared Socio-Economic Pathways and Beyond* Climatic Change 122(3): 495-507.

Birkmann, J., S. L. Cutter, Dale S. Rothman, T. Welle, M. Garschagen, B. van Ruijven, B. O'Neill, B. Preston, S. Kienberger, O. D. Cardona, T. Siagian, D. Hidayati, N. Setiadi, C. Binder, B. B. Hughes, R. Pulwarty (2014). *Scenarios for Vulnerability: Opportunities and Constraints in the Context of Climate Change and Disaster Risk* Climatic Change (10.1007/s10584-013-0913-2)

van Ruijven, B. J., M. Levy, A. Agrawal, F. Biermann, J. Birkmann, T. R. Carter, K. L. Ebi, M. Garschagen, B. Jones, R. Jones, E. Kemp-Benedict, M. Kok, K. Kok, M. C. Lemos, P. L. Lucas, B. Orlove, S. Pachauri, T. Parris, A. Patwardhan, A. Petersen, B. L. Preston, J. Ribot, Dale S. Rothman, and V. J. Schweizer (2014). *Enhancing the Relevance of Shared Socioeconomic Pathways for Climate Change Impacts, Adaptation and Vulnerability Research* Climatic Change 122(3): 481-494

- Hughes, Barry B., Mohammad T. Irfan, Jonathan D. Moyer, Dale S. Rothman, and José R. Solórzano. (2012). "Exploring Future Impacts of Environmental Constraints on Human Development." *Sustainability* 4 (5): 958–94. doi:10.3390/su4050958.
- Hughes, Barry B, Randall Kuhn, Cecilia M Peterson, Dale S Rothman, José R Solórzano, Colin D Mathers, and Janet R Dickson (2011). *Projections of Global Health Outcomes from 2005 to 2060 Using the International Futures Integrated Forecasting Model* Bulletin of the World Health Organization 89(7): 478-486.
- Rothman, Dale S., C. van Bers, J. Bakkes, and C. Pahl-Wostl (2009). *How to Make Global Assessments More Effective: Lessons from the Assessment Community* Current Opinion in Environmental Sustainability 1(2): 214-218.
- Newig, J., H. Haberl, H., C. Pahl-Wostl, and Dale S. Rothman (2008). *Formalised and Non-Formalised Methods in Resource Management—Knowledge and Social Learning in Participatory Processes: An Introduction, Systemic Practice and Action Research*, 21(6): 380-388.
- Svarstad, H., L.K. Petersen, Dale S. Rothman, H. Siepel, and Frank Wätzold (2008). *Discursive biases of the environmental research framework DPSIR*, Land Use Policy 25(1): 116-125.
- Patel, M., K. Kok, and Dale S. Rothman (2007). *Participatory scenario construction in land use analysis: An insight into the experiences and opportunities created by stakeholder involvement in the Northern Mediterranean*, Land Use Policy 24(3): 546-561.
- Kok, K., M. Patel, D. S. Rothman and G. Quaranta (2006). *Multi-scale narratives from an IA perspective: Part II. Participatory local scenario development*, Futures 38(3): 285-311.
- Kok, K., D. S. Rothman and M. Patel (2006). *Multi-scale narratives from an IA perspective: Part I. European and Mediterranean scenario development*, Futures 38(3): 261-284.
- Polatidis, H., D. A. Haralambopoulos, R. Kemp, and Dale S. Rothman (2003). *Creating an energy system that we want but don't know yet, using Integrated Assessment, Transition Management and Multi-Criteria Analysis*, Integrated Assessment 4(3): 205-213.
- van Notten, Philip W. F., Jan Rotmans, Marjolein B. A. van Asselt, and Dale S. Rothman (2003). *An updated scenario typology*, Futures 35(5): 423-443.
- Rotmans, J., M.B.A. van Asselt, C. Anastasi, S.C.H. Greeuw, J. Mellors, S. Peters, Dale S. Rothman, and N. Rijkens, (2000). *Visions for a sustainable Europe*, Futures 32(9/10), pp.809 - 831.
- Rothman, Dale S. (2000) *Measuring Environmental Values and Environmental Impacts: Going from the Local to the Global* Climatic Change 44(3), pp.351-376.
- Demeritt, David and Dale S. Rothman (1999) *Figuring the Costs of Climate Change: An Assessment and Critique* Environment & Planning A 31, pp.389-408.
- Cohen, Stewart, David Demeritt, John Robinson, and Dale S. Rothman (1998) *Climate Change and Sustainable Development*, Global Environmental Change 8(4), pp.341-371.
- Demeritt, David and Dale S. Rothman (1998) *Comments on J.B. Smith (Climatic Change 32, 313-26) and the Aggregation of Climate Change Damage Costs*, Climatic Change, 40(3/4), pp.699-704.

Rothman, Dale S. (1998) *Environmental Kuznets Curves - Real Progress or Passing The Buck? A Case for Consumption-Based Approaches*, Ecological Economics, 25(2), pp. 177-194.

Rothman, Dale S. and Sander de Bruyn (1998) *The Environmental Kuznets Curve Hypothesis Revised*, Ecological Economics, 25(2), pp. 143-146.

Peterson, Garry, Giulio A. De Leo, Jessica J. Hellmann, Marco A. Janssen, Ann Kinzig, Jay R. Malcolm, Karen L. O'Brien, Shealagh E. Pope, Dale S. Rothman, Elena Shevliakova, and Robert R.T. Tinch (1997) *Uncertainty, Climate Change, & Adaptive Management* Conservation Ecology [online] 1(2): 4. 10 pp. Available from the Internet - URL: <http://www.consecol.org/vol1/iss2/art4>.

Repetto, Robert, Dale S. Rothman, Paul Faeth and Duncan Austin (1997) *Productivity Measures Miss the Value of Environmental Protection*, Choices, Fourth Quarter, pp 16-19.

Repetto, Robert, Dale S. Rothman, and Duncan Austin (1997) *Has Environmental Protection Really Reduced Productivity Growth?*, in Challenge, 40(1), pp. 46-57.

Rothman, Dale S. and John Robinson (1997) *Growing Pains: A Conceptual Framework for Considering Integrated Assessment*, in Environmental Monitoring & Assessment, 46(1-2), pp.23-43.

Rothman, Dale S., Jong Ho Hong, and Timothy D. Mount (1994) *Estimating Consumer Energy Demand Using International Data: Theoretical and Policy Implications*, The Energy Journal, 15(2), pp.67-88. (Received George F. Warren Award for distinguished research publication, Cornell University, Department of Agricultural, Resource, and Managerial Economics, 1994; and earlier version appeared as Rothman, Dale S., Jong Ho Hong, and Timothy D. Mount. *Price and Income Elasticities for Consumer Energy Demand: The Importance of Model Forms and Income Changes*, in Proceedings of the North American Conference of the International Association for Energy Economics, October 26-28, 1992.)

Rothman, Dale S. and Duane Chapman (1993) *A Critical Analysis of Climate Change Policy Research*, in Contemporary Policy Issues, XI(1), pp. 88-98. (an earlier version appeared in James C. White ed., Global Climate Change: The Economic Costs of Mitigation and Adaptation Proceedings of a Conference Sponsored by Center for Environmental Information, Inc. New York: Elsevier Science Publishing Co., Inc., 1991. pp. 285-302.)

Book Reviews

Jill Jager and Sarah Cornell, (eds.), The Planet in 2050: The Lund Discourse of the Future, Routledge, London and New York (2011) ISBN: 978-0-415-59000-6, 105 pp. in *TIAS Quarterly* No. 1/2001: 5.

Felix Rauschmayer, Ines Omann and Johannes Frühmann, Editors, Sustainable Development: Capabilities, Needs, and Well-Being, Routledge, London and New York (2011) ISBN 978-0-415-58652-8, 167 pp. in *Ecological Economics* 70(9): 1701.

Books and Edited Volumes

Rothman, Dale S., Mohammad T. Irfan, Eli S. Margolis-Malin, Barry B. Hughes, and Jonathan D. Moyer (2013) Building Global Infrastructure: Patterns of Potential Human Progress Volume 4, Boulder, CO, and New Delhi, India: Paradigm Publishers and Oxford University Press.

Hughes, Barry B., Randall Kuhn, Cecilia Peterson, Dale S. Rothman, José Roberto Solórzano, and Janet R. Dickson (2011). Improving Global Health: Patterns of Potential Human Progress Volume 3, Boulder, CO, and New Delhi, India: Paradigm Publishers and Oxford University Press.

Hughes, Barry B., Mohammad T. Irfan, Haider Khan, Krishna B. Kumar, Dale S. Rothman, and José R. Solórzano (2009). Reducing Global Poverty: Patterns of Potential Human Progress Volume 1, Boulder, CO, and New Delhi, India: Paradigm Publishers and Oxford University Press.

Rotmans, Jan, M. van Asselt, and Dale S. Rothman (2005) Scenario Innovation: Experiences from a European Experimental Garden, London: Taylor & Francis.

Rotmans, Jan and Dale S. Rothman (eds.) (2003). Scaling Issues in Integrated Assessment Linne, The Netherlands: Swets & Zeitlinger Publishers. Lisse, The Netherlands: Swets & Zeitlinger Publishers.

Rothman, Dale S. and Richard B. Howarth (eds.) (2003). *Climate Change and Ecological Economics*, International Journal of Sustainable Development, 6(3).

Rothman, Dale S. (eds.) (2002) *Scaling in Integrated Assessment*, Integrated Assessment, 3(2-3).

Rothman, Dale S. and Sander de Bruyn (eds.) (1998). *Environmental Kuznets Curves*, Ecological Economics 25(2).

Book Chapters

Bowen, Robert and Dale S. Rothman (2014). “Frameworks of Integrating Human Influence and Environmental Change”, in R. E. Bowen, M. H. Depledge, L. E. Fleming, and C. P. Carlarne (eds.) Oceans and Human Health: Implications for Society and Wellbeing. Chichester, UK: Wiley-Blackwell.

Bazilian, M., R. Economy, P. Nussbaumer, E. Haites, K. K. Yumkella, M. Howells, M. Takada, Dale S. Rothman (forthcoming in 2014). “The Scale of Investment for Universal Energy Access Revisited: Beyond Basic Access”, in A. Halff, B. Sovacool, and J. Rozhon (eds.) Energy Poverty: Global Challenges and Local Solutions. Oxford University Press: Oxford.

Jäger, J. Dale S. Rothman, C. Anastasi, S. Kartha, and P. van Nooten (2008). “Scenario Development and Analysis”, in L. Pintér, D. Swanson, and J. Chenje (eds.) IEA Training Manual: A Training Manual on Integrated Environmental Assessment and Reporting, Nairobi: United Nations Environment Programme.

Rothman, Dale S. (2008): “A Survey of Environmental Scenarios”, in Joseph Alcamo (ed.) Environmental Futures: The Practice of Environmental Scenario Analysis. Elsevier: Amsterdam, pp. 37-65.

Farrington, J. H., T. Kuhlman, Dale S. Rothman, Z. Imrichova, L. Reid, and E. Konkoly Gyuro (2008): “Reflections on Social and Economic Indicators for Land Use Change”, in K. Helming, M. Pérez-Soba, and P. Tabbush (eds.). Sustainability Impact Assessment of Land Use Changes, Springer: Berlin, pp. 325-347.

Rothman, Dale S., John Agard, and Joseph Alcamo (2007): “The Future Today”, in United Nations Environment Programme (eds.). Global Environment Outlook 4, UNEP: Nairobi. pp. 397-454

Rothman, Dale S. (2006): "Scenarios: Structured Thinking about the Future", in P. Valkering, B. Amelung, R. van der Brugge, and J. Rotmans (eds.). Puzzle-solving for policy II: Proceedings of the EU Advanced Summer Course in Integrated Assessment methodology, 1 – 12 September 2003, Maastricht, The Netherlands: International Center for Integrative Studies, pp. 92-102.

Alcamo, Joseph, Kasper Kok, Gerald Busch, Jörg A. Priess, Bas Eickhout, Mark Rounsevell, Dale S. Rothman, and Maik Heistermann. 2006. “Searching for the Future of Land: Scenarios from the Local to

Global Scale.” In Eric F. Lambin and Helmut Geist (eds.), Land-Use and Land-Cover Change: Local Processes and Global Impacts. Global Change - The IGBP Series. Berlin: Springer. pp. 137-155.

Yohe, G., W.N. Adger, H. Dowlatabadi, K. Ebi, S. Huq, D. Moran, Dale S. Rothman, K. Strzepek, and G. Ziervogel (2005): “Recognizing Uncertainties in Evaluating Responses”, in Millennium Ecosystem Assessment (ed.) Ecosystems and Human Well-being: Policy Responses, Volume 3. pp. 95-116.

Rothman, Dale S., John B. Robinson, and Dave Biggs, (2002): "Signs of Life: Linking Indicators and Models in the Context of QUEST." in: Hussein Abaza and Andrea Baranzini (eds), Implementing Sustainable Development. Integrated Assessment and Participatory Decision-Making Processes. Cheltenham (UK): Edward Elgar. pp. 182-199.

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Rothman, Dale S. (2014). Quantifying Future Vulnerability in Scenarios of Socio-economic Development, '5th International Disaster and Risk Conference', Davos, Switzerland, 24-28 August 2014.

Rothman, Dale S. (2013). Enhancing the Quantitative Representation of Socioeconomic Conditions in the Shared Socioeconomic Pathways (SSPs) using the International Futures System (IFs), 'AGU 46th Annual Fall Meeting', San Francisco, California, 9-13 December.

Rothman, Dale S. (2013). Scenarios for Climate Change Research: Bridging the Gaps Between Disciplinary Communities, 'ISSRM 2013: A Time for Integration', Estes Park, Colorado, 4-8 June 2013.

Rothman, Dale S. (2012). Scenarios as Tools for Structured and Systemic Thinking about Sustainability, 'Gordon Research Conference: The Role of Industrial Ecology in Addressing Sustainability', Les Diablerets, Switzerland, 17-22 2012.

Rothman, Dale S. (2010). Environment and Health: What Can We Say About the Future?, 'ISEE 2010: Advancing Sustainability in a Time of Crisis', Oldenburg, Germany, 22-25 August 2010.

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Rothman, Dale S. (2005). GHG emissions in integrated environmental and sustainability scenarios, 'IPCC Workshop on New Emission Scenarios', Laxenburg Austria, 29 June – 1 July 2005.

Rothman, Dale S. (2002). Estimating non-market impacts, 'OECD Workshop on the Benefits of Climate Policy: Improving Information for Policy Makers', Paris, 12-13 December 2002.

Rothman, Dale S. (2002). Global change scenarios: a framework for environmental research and policy making, 'Global Change Scenarios: FINSKEN Final Seminar', Helsinki, 27-28 November 2002.

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Rothman, Dale S. (2001). Integrated Visions for a Sustainable Europe: The VISIONS Project, Inaugural Meeting, US Society for Ecological Economics, Duluth, 11-13 July 2001.

PROFESSIONAL AFFILIATIONS

International Society for Ecological Economics (editor of *Ecological Economics* since July 2015)

DALE SCOTT ROTHMAN

US Society for Ecological Economics
The Integrated Assessment Society (member of Advisory Board) and past vice-President
System Dynamics Society

OTHER SKILLS AND PERSONAL INTERESTS

Languages: Native English speaker; strong knowledge of Spanish and Dutch, some knowledge of German.

Computer skills: productivity packages – spreadsheet, database, communications, word processing, statistical (SAS, SPSS, JMP, R); systems modelling packages – Simile, VenSim, STELLA, Insight Maker; programming languages – Visual Basic, Pascal, JAVA; operating systems – Mac, Windows