

Curriculum Vitae

CUTLER JOHN CLEVELAND

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EDUCATION

B.S. Cornell University, Ithaca, NY	Biology	1980
M.S. Louisiana State University, Baton Rouge, LA	Marine Science	1982
Ph.D. University of Illinois, Urbana, IL	Geography	1988

PROFESSIONAL EXPERIENCE

Fall 2021	Interim Director, Institute for Sustainable Energy, Boston University
2019-	Associate Director, Institute for Sustainable Energy, Boston University
2000-	Professor, Department of Earth and Environment, Boston University
2015-	Faculty Advisory Board, Institute for Sustainable Energy, Boston University
2007-2014	Senior Fellow, National Council for Science and the Environment
2003-	Faculty Associate, Pardee Center for the Study of the Longer-Range Future, Boston University
1996-	Faculty Associate, Center for Ecology and Conservation Biology, Boston University
1993-2005	Director, Center for Energy and Environmental Studies, Boston University
1993-2000:	Associate Professor, Department of Geography, Boston University
1987-1993:	Assistant Professor, Department of Geography, Boston University
1991-1993:	Chairman, Interdisciplinary Program in Environmental Studies, Boston University
1992-1993:	Lecturer, Advanced Education Programme of the Commission of European Communities
1989:	Visiting Lecturer, Dept. of Agricultural Engineering, Swedish University of Agricultural Sciences, Uppsala, Sweden

AWARDS AND HONORS

Highlighted Paper in Energy Policy, Elsevier B.V., Véliz, Karina D., Robert Kaufmann, and Cutler J. Cleveland. 2017. The effect of climate change on electricity expenditures in Massachusetts, *Energy Policy*, 106: 1-11

First Prize, Best Paper Awards for 2015, *Sustainability* journal, David J. Murphy, Charles A.S. Hall, Michael Dale and Cutler J. Cleveland, Order from Chaos: A Preliminary Protocol for Determining the EROI of Fuels, *Sustainability* 2015, 3(10), 1888-1907

Best Website of the Year (2008) by the Geoscience Information Society (Awarded to Encyclopedia of Earth, C. Cleveland, Founding Editor-in-Chief)

Adelman-Frankel Award, United States Association of Energy Economics, 2006, "for unique and innovative contributions to the field of energy economics"

"Outstanding Academic Title" for 2004, American Library Association, *The Encyclopedia of Energy* (six volumes), Cleveland, Cutler J., Editor-in-Chief. (Elsevier Science, Oxford, UK, 2004).

Clyde F. Kohn Memorial Lecture, University of Iowa, Department of Geography, 2005

Award for Teaching Excellence, Honors Program, College for Arts and Sciences, Boston University (2003).

Outstanding Paper Award, International Association of Energy Economics. [Cutler J. Cleveland and Robert Kaufmann. Forecasting Ultimate Oil Recovery and Its Rate of Production: Incorporating Economic Forces Into the Models of M. King Hubbert. *The Energy Journal*, 12: 17-46 (1991)].

Excellent Teacher List, University of Illinois.

American Petroleum Institute and National Wildlife Federation Environmental Conservation Fellowship.

National Wildlife Federation Publication Award. [Energy and the U.S. Economy: A Biophysical Perspective. *Science* 225, 890 (1984)].

Finalist, Sigma Xi Scientific Society Publication Award.

Department of Energy Fellowship to the Solar Energy Research Institute, Golden, CO.

Fellowship, Center for Energy Studies, Louisiana State University.

PROFESSIONAL ACTIVITIES

Founder and Co-Director

Visualizing Energy < <https://visualizingenergy.org/>>

Board of Directors

Scientific Advisory Board, [Project Drawdown](#)

[Metcalf Institute for Marine and Environmental Reporting](#), Graduate School of Oceanography, University of Rhode Island (2008-2010)

American Statistical Association's [Committee on Energy Statistics](#), an advisory group to the Department of Energy (2004-2010)

SCOPUS Advisory Board, Elsevier Science, Amsterdam (2004- 2010)

The Digital Universe Foundation (2005- 2009)

Mayor's Energy Advisory Board, City of Boston, MA (2001-02)

Council of Energy Advisors, the Gerson Lehrman Group (2001-2012)

Editor-in-Chief

[The Encyclopedia of Energy](#), Online Edition, Elsevier Science (2004-)

[The Encyclopedia of Earth](#), Published by the National Council for Science and the Environment, Washington, D.C. (2006-2012)

[Ecological Economics](#), Elsevier Science (2002-2007)

PUBLICATIONS

Editorships:

Cleveland, Cutler J., Editor-in-Chief. 2004. [The Encyclopedia of Energy](#) (six volumes). (Elsevier Science, Oxford, UK).

Cleveland, Cutler J., Founding Editor-in-Chief. 2006. [The Encyclopedia of Earth](#)

Cottrell, W. Fred. 2009. [Energy and Society: The Relationship Between Energy, Social Change, and Economic Development](#) (C. Cleveland, Editor, Online revised second edition)

Cleveland, Cutler J., David Blockstein, Lawrence Rouse and Vince Wilson (Editors). 2010. [Online Clearinghouse for Education & Networking: Oil Interdisciplinary Learning](#) (OCEAN-OIL).

Books:

Hall, Charles A.S., Cutler J. Cleveland, and Robert K. Kaufmann. [Energy and Resource Quality: The Ecology of the Economic Process](#). (Wiley Interscience: New York, 1986). (Reprinted by the University of Colorado Press, Niwot, CO 1992).

Costanza, Robert, Charles Perrings and Cutler J. Cleveland (Editors). [The Development of Ecological Economics](#) (Edward Elgar Publishing, Cheltenham, England, 1997).

Cleveland, Cutler J., Robert Costanza and David I. Stern (Editors). [The Nature of Economic and the Economics of Nature](#) (Edward Elgar Publishing, Cheltenham, England, 2001).

Cleveland, Cutler J. and Christopher Morris. 2005. [The Dictionary of Energy](#). (Elsevier Science, Oxford, UK).

Kaufmann, Robert K. and Cleveland, Cutler J. 2007. [Environmental Science](#) (McGraw-Hill, Dubuque, IA).

Cleveland, Cutler J. and Christopher Morris. 2009. [The Dictionary of Energy](#). (Expanded Paperback Edition) (Elsevier Science, Oxford, UK).

Cleveland, Cutler J., Editor-in-Chief. 2009. [Concise Encyclopedia of the History of Energy](#). (Elsevier Science, Oxford, UK).

Cleveland, Cutler J. and Christopher Morris. 2013. [The Handbook of Energy, Volume 1: Diagrams, Charts, and Tables](#). (Elsevier Science, Oxford, UK).

Cleveland, Cutler J. and Christopher Morris. 2013. [The Handbook of Energy, Volume 2: Volume II: Chronologies, Top Ten Lists, and Word Clouds](#). (Elsevier Science, Oxford, UK).

Cleveland, Cutler J. 2013. [Energy and Climate: A Primer](#), (Trunity, Davie, FL USA).

Cleveland, Cutler J. and Christopher Morris. 2014. [The Dictionary of Energy \(2nd Edition\)](#). (Elsevier Science, Oxford, UK).

Technical Reports:

Vilallonga, Lucía and Cutler J. Cleveland. 2022. *Direct Air Carbon Capture and Storage Market Scan*. Boston University Institute for Global Sustainability, https://www.bu.edu/igs/files/2022/09/Direct-Air-Carbon-Capture-and-Storage-Market-Scan_091522.pdf

Cleveland, Cutler J., Michael J. Walsh, Joshua R., Castigliero, Taylor Perez, Peter Fox-Penner, Kevin Zheng, and Adam Pollack. 2019. *Carbon Free Boston: Summary Report* (Boston Green Ribbon Commission and the Boston University Institute for Sustainable Energy, Boston, MA, USA). Available at <https://hdl.handle.net/2144/39230>.

Cleveland, Cutler J., Liz Stanton, Bryndis Woods, Atyia Martin, D'Janapha Fortune, Michael J. Walsh, Joshua R., Castigliero, Taylor Perez, and Emma Galante. 2019. *Carbon Free Boston: Social Equity Report* (Boston Green Ribbon Commission and the Boston University Institute for Sustainable Energy, Boston, MA, USA). Available at <https://hdl.handle.net/2144/39229>.

Walsh, Michael J., Patrick L. Kinney, Jonathan I. Levy, Lindsay Tallon, Nash Skipper, Armistead Russell, Joshua R. Castigliero, Adam Pollack, Kevin Zheng, and Cutler J. Cleveland. 2019. *Carbon Free Boston: Technical Summary* (Boston Green Ribbon Commission and the Boston University Institute for Sustainable Energy, Boston, MA, USA). Available at <https://hdl.handle.net/2144/39218>.

Hatchadorian, Rebecca, Rob Best, Katie Wholey, Alexandra Calven, Erica Levine, Sara Tepfer, Brian Swett, Michael J. Walsh, Adam Pollack, Taylor Perez, Joshua R. Castigliero, and Cutler J. Cleveland. 2019. *Carbon Free Boston: Buildings Technical Report* (Boston Green Ribbon Commission and the Boston University Institute for Sustainable Energy, Boston, MA, USA). Available at <https://hdl.handle.net/2144/39213>.

Porter, Christopher, Martin Milkovits, Xiao Yun (Jane) Chang, Scott Boone, Michael J. Walsh, Joshua R. Castigliero, and Cutler J. Cleveland. 2019. *Carbon Free Boston: Transportation Technical Report* (Boston Green Ribbon Commission and the Boston University Institute for Sustainable Energy, Boston, MA, USA). Available at <https://hdl.handle.net/2144/39214>.

Castigliero, Joshua R., Michael J. Walsh, Adam Pollack, and Cutler J. Cleveland. 2019. *Carbon Free Boston: Waste Technical Report* (Boston Green Ribbon Commission and the Boston University Institute for Sustainable Energy, Boston, MA, USA). Available at <https://hdl.handle.net/2144/39215>.

Walsh, Michael J., Peter Fox-Penner, Kevin Zheng, Adam Pollack, and Cutler J. Cleveland. 2019. *Carbon Free Boston: Energy Technical Report* (Boston Green Ribbon Commission and the Boston University Institute for Sustainable Energy, Boston, MA, USA). Available at <https://hdl.handle.net/2144/39216>.

Maron, Ariella, Kevin Zheng, Michael J. Walsh, Peter Fox-Penner, and Cutler J. Cleveland. 2019. *Carbon Free Boston: Offsets Technical Report* (Boston Green Ribbon Commission and the Boston University Institute for Sustainable Energy, Boston, MA, USA). Available at <https://hdl.handle.net/2144/39217>.

Journal Articles and Book Chapters:

Pimentel, David, M.A. Moran, S. Fast, G. Weber, R. Bukantis, L. Baillet, P. Boveng, C. Cleveland, S. Hindman, and M. Young. Biomass Energy From Crop and Forestry Residues. *Science* 212: 1110-1115 (1981).

Hall, Charles, and C.J. Cleveland. Petroleum Drilling and Production in the U.S.: Yield Per Effort and Net Energy Analysis. *Science* 211: 576-579(1981).

Hall, Charles, Cutler J. Cleveland, and Mitchell Berger. Yield Per Effort and Net Energy Analyses of Several Domestic Energy Industries. In *Energy and Ecological Modeling*, W. Mitsch, Ed. (Elsevier Scientific, NY, 1982), pp. 715-724.

Cleveland, Cutler J., Christopher Neill, and John W. Day, Jr. The Impact of Artificial Canals on Land Loss in Barataria Bay, Louisiana. In *Energy and Ecological Modeling*, W. Mitsch, Ed. (Elsevier Scientific, NY, 1982), pp. 425-434.

Hall, Charles A.S., Cutler J. Cleveland, and Robert Kaufmann. Time Series Analysis of Energy and the U.S. Economy. *Integration of Ecology and Economics: An Outlook for the Eighties*, Ann-Mari Jansson, Ed. (University of Stockholm, Stockholm, Sweden, 1982), pp. 69-72.

Cleveland, Cutler J. and Robert Costanza. Net Energy Analysis of Geopressured Gas Resources in the U.S. Gulf Coast Region. In *Energy and Ecological Modeling*, W.J. Mitsch, Ed. (Elsevier Scientific, NY, 1983).

- Cleveland, Cutler J. and Robert Costanza. Net Energy Analysis of Geopressed Gas Resources in the U.S. Gulf Coast Region. *Energy* 9: 35-51 (1984).
- Cleveland, Cutler J., Robert Costanza, Charles A.S. Hall, and Robert Kaufmann. Energy and the U.S. Economy: A Biophysical Perspective. *Science* 225: 890-897 (1984). (Winner of the 1985 National Wildlife Federation and American Petroleum Institute's Environmental Publication Award, and a Sigma Xi Publication Award); Reprinted in Costanza, Robert, Charles Perrings and Cutler J. Cleveland (Editors). *The Development of Ecological Economics* (Edward Elgar Publishing, Hants, England, 1996); Reprinted in Krishnan, R., J. M. Harris, N.R. Goodwin (Editors), *A Survey of Ecological Economics* (Island Press, Washington, D.C., 1995), pp 211-213. Reprinted in Ayres, Robert and Peter Nijkamp (Editors), *Global Aspects of the Environment* (Edward Elgar Publishing, Hants, England, 1999).
- Cleveland, Cutler J. Biophysical Economics: Historical Perspective and Current Research Trends. *Ecological Modelling* 38: 47-73 (1987); Reprinted in Costanza, Robert, Charles Perrings and Cutler J. Cleveland (Editors). *The Development of Ecological Economics* (Edward Elgar Publishing, Hants, England, 1996); Reprinted in Krishnan, R., J. M. Harris, N.R. Goodwin (Editors), *A Survey of Ecological Economics* (Island Press, Washington, D.C., 1995), pp 29-32.
- West, R.E., Frank Kreith, and Cutler J. Cleveland. Energy Analysis for Renewable Energy Technologies. *Transactions of American Society of Heating, Refrigerating, and Air-Conditioning Engineers* 93: 999-1010 (1987).
- Cleveland, Cutler J., and Robert Herendeen. Solar Parabolic Troughs: Succeeding Generations Are Better Net Energy Producers. *Energy Systems and Policy* 13: 63-77 (1989)
- Cleveland, Cutler J. and Robert Kaufmann. Forecasting Ultimate Oil Recovery and Its Rate of Production: Incorporating Economic Forces Into the Models of M. King Hubbert. *The Energy Journal*, 12: 17-46 (1991). (Winner of "Outstanding Paper for 1991" Award, International Association of Energy Economists); Reprinted in Costanza, Robert, Charles Perrings and Cutler J. Cleveland (Editors), *The Development of Ecological Economics* (Edward Elgar Publishing, Hants, England, 1996).
- Kaufmann, Robert K., and Cutler J. Cleveland. Policies to Increase U.S. Oil Production: Likely to Fail, Damage the Economy and Damage the Environment. *Annual Review of Energy* 16: 379-400 (1991).
- Piccot, S., T. Lynch, R. Kaufmann, C. J. Cleveland, and B. Moore. Analysis of Radiatively Important Trace Gases (RITG) Emissions: Development of a Trace Gas Accounting System (TGAS) for 14 Countries. Research Report No. EPA-600/9-91-019, Environmental Protection Agency, Washington, D.C. (1991).
- Cleveland, Cutler J. Physical and Economic Aspects of Natural Resource Scarcity: The Cost of Oil Supply in the Lower 48 United States, 1936-1987. *Resources and Energy*, 13: 163-188 (1991).
- Cleveland, Cutler J. Natural Resource Scarcity and Economic Growth Revisited: Economic and Biophysical Perspectives. In *Ecological Economics--The Science and Management of Sustainability*, R. Costanza, Ed. (Columbia University Press, NY, 1991), pp. 289-317. Reprinted in Krishnan, R., J. M. Harris, N.R. Goodwin (Editors), *A Survey of Ecological Economics* (Island Press, Washington, D.C., 1995), pp 214-218.
- Cleveland, Cutler J. Yield Per Effort for Additions to Crude Oil Reserves in the Lower 48 States, 1946-1989. *American Association of Petroleum Geologists Bulletin*, 76: 948-958 (1992).
- Cleveland, Cutler J. Energy Surplus and Energy Quality in the Extraction of Fossil Fuels in the U.S. *Ecological Economics*, 6: 139-162 (1992).
- Kaufmann, Robert K., and Cutler J. Cleveland. Failures and Impacts of Oil Policies in the U.S. *Solar Today*, 6: 38 (1992).
- Mitchell, Catherine and Cutler J. Cleveland. Resource Scarcity, Energy Use and Environmental Impact: A Case Study of the New Bedford, Massachusetts Fisheries. *Environmental Management*, 17: 305-318 (1993).
- Cleveland, Cutler J. An Exploration of Alternative Measures of Natural Resource Scarcity: the Case of Petroleum Resources in the U.S. *Ecological Economics*, 7: 123-157 (1993).
- Cleveland, Cutler J. and David I. Stern. The Scarcity of Forest Products Revisited: An Empirical Comparison of Alternative Indicators. *Canadian Journal of Forest Research*, 23: 1537-1549 (1993).
- Cleveland, Cutler J. Re-Allocating Work Between Human and Natural Capital: Examples from India and the United States In *Investing in Natural Capital: The Ecological Economics Approach to Sustainability*, A. M. Jansson, C. Folke, R. Costanza, and M. Hammer, Eds. (Island Press, Covelo, CA, 1994), pp. 179-199.
- Ruth, Matthias and Cutler J. Cleveland. Nonlinear Dynamic Simulation of Optimal Depletion of Crude Oil in the Lower 48 U.S. *Computers, Environment, and Urban Systems*, 17: 425-435 (1993).
- Cleveland, Cutler J. Resource Degradation, Technical Change, and the Productivity of Energy Use in U.S. Agriculture. *Ecological Economics*, 13: 185-201 (1995).
- Cleveland, Cutler J. The Direct and Indirect Use of Fossil Fuels and Electricity in U.S. Agriculture, 1910 to 1990. *Agriculture, Ecosystems, and Environment*, 55: 111-121 (1995).

- Cutler J. Cleveland and Matthias Ruth. Interdependencies Between the Depletion of Minerals and Fuels: The Case of Copper Production in the U.S. *Energy Sources*, 18: 355-373 (1996).
- Ruth, Matthias and Cutler J. Cleveland. 1996. Modeling the Dynamics of Resource Depletion, Substitution, Recycling, and Technical Change in Extractive Industries. In *Down to Earth: Practical Applications of Ecological Economics*, R. Costanza, O. Segura and J. Martinez-Alier, Eds. (Island Press, Covelo, CA), pp.301-324.
- Kaufmann, Robert K. and Cutler J. Cleveland. Measuring sustainability: Needed--an interdisciplinary approach to an interdisciplinary problem. *Ecological Economics*, 15: 109-112 (1995).
- Goldfinger, Steven, H., (and 31 others). 1996. *Principles of Sustainability in Higher Education*. (President's Council on Sustainable Development, Washington, D.C.).
- Costanza, Robert, Cutler J. Cleveland and Charles Perrings. 1997. Introduction. In *The Development of Ecological Economics* Robert Costanza, Cutler J. Cleveland and Charles Perrings, Eds. (Edward Elgar Publishing, Hants, England), pp xiii-xxix.
- Cleveland, Cutler J. and Matthias Ruth. When, Where, and By How Much Do Biophysical Limits Constrain the Economic Process? The Contribution of Nicholas Georgescu-Roegen to Ecological Economics. *Ecological Economics*, 22: 203-223 (1997).
- Cleveland, Cutler J. and Robert Kaufmann. Natural Gas in the U.S.: How Far Can Technology Stretch the Resource Base? *The Energy Journal*, 18: 89-108 (1997).
- Cleveland, Cutler J. Indicators of sustainability: elusive quest or frontier of ecological-economic analysis? *Medi Ambient*, 17: 12-31 (1997).
- Cleveland, Cutler J. and Matthias Ruth. 1997. Human Capital, Natural Capital and Biophysical Constraints in the Economic Process. In *Meio Ambiente, Desenvolvimento Sustentavel e Politicas Publicas*, Clovis Cavalcanti, Ed. (Sao Paulo: Cortez Editora), pp. 131-164.
- Cleveland, Cutler J. and David I. Stern. 1998. Measuring Natural Resource Scarcity: A Review, Synthesis, and Application to US Agriculture. In *Theory and Implementation of Economic Models for Sustainable Development*, Jeroen C.J.M van den Bergh, and M. W. Hofkes, Eds. (Kluwer, Amsterdam), pp. 113-138.
- Cleveland, Cutler J. and Matthias Ruth. 1998. Indicators of Dematerialization and the Materials Intensity of Use. *Industrial Ecology*, 2: 13-49.
- Cleveland, Cutler J., David I. Stern, and Robert K. Kaufmann. 1998. The Aggregation of Energy and Materials in Economic Indicators of Sustainability: Thermodynamic, Biophysical, and Economic Approaches. In *Advances in Energy Studies: Energy Flows in Ecology and Economy* Sergio Ulgiati, Ed. (Museum of Science and Scientific Information, Rome), pp. 143-166.
- Cleveland, Cutler J. and David I. Stern, 1999. Indicators of Natural Resource Scarcity: A Review and Synthesis. In: *Handbook of Resource and Environmental Economics*, Jeroen C.J.M van den Bergh (Ed.). Edward Elgar Publishing, Cheltenham, England, pp 89-108.
- Cleveland, Cutler J. . 1999. Biophysical Economics: From Physiocracy to Ecological Economics and Industrial Ecology. In *Bioeconomics and Sustainability: Essays in Honor of Nicholas Georgescu-Roegen*, J. Gowdy and K. Mayumi, Eds. (Edward Elgar Publishing, Cheltenham, England), pp. 125-154.
- Cleveland, Cutler J., David I. Stern, and Robert K. Kaufmann. Aggregation and the Role of Energy in the Economy *Ecological Economics*, 32: 301-317 (2000).
- Cleveland, Cutler J., Robert Costanza, Thrainn Eggertsson, Louise Fortmann, Bobbi S. Low, Margaret McKean, Elinor Ostrom, James Wilson, Oran Young. 2000. A Framework for Modeling the Linkages Between Ecosystems and Human Systems. In *Institutions, Ecosystems, and Sustainability*, Robert Costanza, Bobbi S. Low, Elinor Ostrom and James Wilson, Eds. (Lewis, Boca Raton).
- Cleveland, Cutler J. and David I. Stern. 2000. Beyond Natural Resource Scarcity Indicators: An Ecological-Economic Synthesis. In Cleveland, Cutler J., Robert Costanza and David I. Stern Eds. *The Nature of Economics and the Economics of Nature* (Edward Elgar Publishing, Hants, England).
- Cleveland, Cutler J., Robert Costanza and David I. Stern. 2000. The Changing Nature of Ecological Economics. In Cleveland, Cutler J., Robert Costanza and David I. Stern Eds. *The Nature of Economics and the Economics of Nature* (Edward Elgar Publishing, Cheltenham, England).
- Cleveland, Cutler J., Charles A.S. Hall, and Robert K. Kaufmann. 2000. Meeting the Ecological Limits. Pp. 67-123 in: Pentti Vartia, Ed. *Climate Change: Socioeconomic Dimensions and Consequences of Mitigation Measures*. (Helsinki, Fortum).
- Costanza, R., C. Perrings, and C. J. Cleveland. 2000. Ecosystem and economic theories in ecological economics. Pp. 547-560 in: S. E. Jorgensen and F. Mueler (eds) *Handbook of Ecosystem Theories and Management*. Lewis Press, Boca Raton, FL. 584 pp.

- Cleveland, Cutler J. 2001. The determinants of U.S. oil production in the lower 48 states. Pp. 1-5 in International Petroleum Industry Environmental Conservation Association, Ed. *Long-term Carbon and Energy Management*. (IPIECA, London).
- Kaufmann, R. K. and Cleveland, C. J. 2001. Oil Production in the lower 48 states: economic, geological. and institutional determinants. *Energy Journal*, 22: 27-49.
- Costanza, Robert, Cutler J. Cleveland and Charles Perrings. 2002. The Development of Ecological Economics. Pp. 87-110 in: Peter N. Nemetz, Ed. *Bringing Business on Board: Sustainable Development and the B-School Curriculum*. (JBA Press, Vancouver).
- Kaufmann, R. K. and C. J. Cleveland. 2003. Oil Supply and Oil Politics: Déjà Vu All Over Again. *Energy Policy*, 31: 485-489.
- Cleveland, Cutler J. 2003. Biophysical constraints to economic growth. In D. Al Gobaisi, Editor-in-Chief. *Encyclopedia of Life Support Systems*, (EOLSS Publishers Co., Oxford, UK).
- Frank, Jeff D. Thomas H. Kunz, Jason Horn, Cutler J. Cleveland and Susan Petronio. 2003. Advanced infrared detection and image processing for automated bat censusing. *Proceedings of SPIE*, 5074: 261-271.
- Najam, Adil and Cutler J. Cleveland. 2003. Energy and Sustainable Development at Global Environmental Summits: An Evolving Agenda. *Environment, Development and Sustainability*, 5: 117-138.
- Cleveland, Cutler J. 2003. The importance of energy quality in the transition to a solar economy. pp. 129-147 in Emirates Center for Strategic Studies and Research, Ed. *The Future of Oil as a Source of Energy* (Routledge, London).
- Hall, Charles Pradeep Tharakan, John Hallock, Cutler Cleveland and Michael Jefferson. 2003. Hydrocarbons and the Evolution of Human Culture. *Nature*, 426: 318-322.
- Cleveland, Cutler J. 2005. Net energy from oil and gas extraction in the United States, 1954-1997. *Energy*, 30: 769-782.
- Najam, Adil and Cutler J. Cleveland. 2005. Energy and Sustainable Development, in L. Hens, B. Nath, Eds, *The World Summit on Sustainable Development. The Johannesburg Conference*, (Springer, Dordrecht, The Netherlands), pp. 113-134.
- Cleveland, Cutler J., Margrit Betke, Paula Federico, Jeff D. Frank, Irma Gomez, Thomas G. Hallam, Jason Horn, Thomas H. Kunz, Juan D. López Jr, Gary F. McCracken, Rodrigo A. Medellín, Arnulfo Moreno-Valdez, Chris Sansone, John K. Westbrook. 2007. Estimation of the Economic Value of the Pest Control Service Provided by the Brazilian Free-tailed Bat in the Wintergarden region of South-Central Texas. *Frontiers of Ecology and the Environmen* 4(5): 238-243
- Cleveland, Cutler J., C.A.S.Hall and R. Herendeen. 2006. Energy returns on ethanol production. *Science* (letters) 312:1746.
- Cleveland, Cutler J. 2007. Energy Quality, Net Energy and the Coming Energy Transition, In Jon D. Erickson and John M. Gowdy, Eds., *Frontiers in Ecological Economic Theory and Application*, (Edward Elgar, Cheltenham, UK), pp. 268-284.
- Margrit Betke, Diane E. Hirsh, Nicholas C. Makris, Gary F. McCracken, Marianne Procopio, Nickolay I. Hristov, Shuang Tang, Angshuman Bagchi, Jonathan D. Reichard, Jason W. Horn, Stephen Crampton, Cutler J. Cleveland, and Thomas H. Kunz Thermal Imaging Reveals Significantly Smaller Brazilian Free-tailed Bat Colonies than Previously Estimated, *Journal of Mammalogy*, Volume 89, Issue 1 (February 2008) pp. 18-24. OI: 10.1644/07-MAMM-A-011.1
- Federico, Paula Thomas G. Hallam, Gary F. McCracken, S. Thomas Purucker, William E. Grant, A. Nelly Correa Sandoval, John K. Westbrook, Rodrigo A. Medellín, Cutler J. Cleveland, Chris G. Sansone, Juan D. López Jr., Margrit Betke, Arnulfo Moreno-Valdez, Thomas H. Kunz. Brazilian Free-tailed Bats (*Tadarida brasiliensis*) as Insect Pest Regulators in Transgenic and Conventional Cotton Crops. *Ecological Applications* Volume 18, Issue 4 (June 2008) pp. 826-837, doi: 10.1890/07-0556.1
- Kubiszewski, Ida Cutler J. Cleveland, Peter K. Endres, 2010. Meta-analysis of net energy return for wind power systems, *Renewable Energy*, 35: 218-225.
- Guilford, Megan C.; Hall, Charles A.S.; Connor, Pete O'; Cleveland, Cutler J. 2011. "A New Long Term Assessment of Energy Return on Investment (EROI) for U.S. Oil and Gas Discovery and Production." *Sustainability* 3, no. 10: 1866-1887.
- Cleveland, Cutler J.; O'Connor, Peter A. 2011. "Energy Return on Investment (EROI) of Oil Shale." *Sustainability* 3, no. 11: 2307-2322.
- Murphy, David J.; Hall, Charles A.S.; Dale, Michael; Cleveland, Cutler. 2011. "Order from Chaos: A Preliminary Protocol for Determining the EROI of Fuels." *Sustainability* 3, no. 10: 1888-1907.
- O'Connor, Peter A. and Cutler J. Cleveland. 2014. U.S. Energy Transitions 1780-2010. *Energies* 2014:7955-7993
- Véliz, Karina D., Robert Kaufmann, and Cutler J. Cleveland. 2017. The effect of climate change on electricity expenditures in Massachusetts, *Energy Policy*, 106: 1-11

Castigliero, Joshua R., Adam Pollack, Cutler J. Cleveland, Michael J. Walsh, Evaluating emissions reductions from zero waste strategies under dynamic conditions: A case study from Boston, *Waste Management*, Volume 126, 2021, Pages 170-179,

Theses:

Physical and Economic Models of Natural Resource Scarcity: Theory and Application to Petroleum Development and Production in the Lower 48 United States, 1955-1985. Ph.D. Dissertation, University of Illinois, IL. 1988.

An Energy-Based Approach to Natural Resource Analysis: Theory and Application to Geopressed Gas Resources in Louisiana. Master's Thesis, Louisiana State University, Baton Rouge, 1982.

FUNDED GRANTS & CONTRACTS

Support for Visualizing Energy (<https://visualizingenergy.org/>), **Cresta Fund Management**, \$20,000 (2023)

Review of Proposals for Green H2 Production at the Come By Chance Refinery, **Braya Renewable Fuels and Cresta Fund Management**, \$5,000 (2023), Principal Investigator: Cutler Cleveland

Market Analysis of Carbon Dioxide Direct Air Capture Technology, Innovation Network for Communities, \$10,000 (2022), Principal Investigator: Cutler Cleveland

A Framework to Understand and Act on the Links Between COVID and City Climate Action, **Innovation Network for Communities**, \$13,500 (2020)

Cloud-Based Urban Climate Action Planning, **Microsoft AI for Earth**, Principal Investigators: Cutler Cleveland, Suchi Gopal (\$10,000) (2019)

Carbon Free Boston, **Barr Foundation, Leventhal Foundation, Kendall Foundation, Hewlett Foundation, Grantham Foundation, C40, Commonwealth of Massachusetts, City of Boston, Eversource, National Grid, Bank of America**, Principal Investigator: Cutler Cleveland, Co-PI: Peter Fox-Penner (\$985,000) (2019)

Online Clearinghouse for Education & Networking: Oil Interdisciplinary Learning (OCEAN-OIL), **National Science Foundation** (\$200,000) (2010-2011), Principal Investigators: David Blockstein, Cutler Cleveland, Larry Rouse, Vince Wilson.

Energy Transitions, **Andrew W. Mellon Foundation**, (\$150,000) (2010-2012). Principal Investigators: Cutler J. Cleveland and Adil Najam.

Lead-Based Paint Risk Education. **U.S. Environmental Protection Agency**, (\$75,000) (2008-2010). Principal Investigators: Cutler J. Cleveland and Richard Reibstein.

Support for Editorial Offices of the Encyclopedia of Earth. **National Council for Science and the Environment**, (\$38,000) (2007-2008). Principal Investigator: Cutler J. Cleveland

Support for Editorial Offices of the Encyclopedia of Earth. **National Council for Science and the Environment**, (\$32,000) (2006-2007). Principal Investigator: Cutler J. Cleveland

Assistance and Outreach to the Regulated Community on Compliance with Federal Lead Paint Requirements—Phase III. **U.S. Environmental Protection Agency**, (\$50,000) (2005-2006). Principal Investigators: Cutler J. Cleveland and Richard Reibstein.

Assistance and Outreach to the Regulated Community on Compliance with Federal Lead Paint Requirements—Phase II. **U.S. Environmental Protection Agency**, (\$50,000) (2004-2005). Principal Investigators: Cutler J. Cleveland and Richard Reibstein.

Assistance and Outreach to the Regulated Community on Compliance with Federal Lead Paint Requirements—Phase I. **U.S. Environmental Protection Agency**, (\$50,000) (2003-2004). Principal Investigators: Cutler J. Cleveland and Richard Reibstein.

Integrated Technology for Decisions Relating Conservation Biology and Economics Impact of Brazilian Free-Tailed Bats on Agroecosystems. **National Science Foundation**, \$2,400,000 (2003-2006). Principal Investigator: Thomas Kunz; Co-PIs: Cutler J. Cleveland, Margrit Betke, Gary F. McCracken, John K. Westbrook, Thomas G. Hallam.

The Project on Human Development, **Pardee Center for the Study of the Longer Range Future, Boston University**. \$22,500 (2003-2004). Principal Investigators: Cutler J. Cleveland and Adil Najam.

Assistance and Outreach to the Regulated Community on Compliance with Federal Lead Paint Requirements. **U.S. Environmental Protection Agency**, (\$50,000) (2003-2004). Principal Investigators: Cutler J. Cleveland and Richard Reibstein.

- The Project on Human Development, the *Pardee Center for the Study of the Longer Range Future*, Boston University. \$195,000 (2002-2003). Principal Investigators: Cutler J. Cleveland and Adil Najam
- Ecological-Economic Modeling of Natural Pest Control Services, *National Center for Ecological Synthesis and Analysis, UC/Sanata Barbara (through the National Science Foundation)* \$102,000 (2001-2003). Principal Investigators: Thomas Kunz and Cutler J. Cleveland.
- Integrated Modeling and Assessment of Natural Populations Using Infrared and Doppler Radar Imaging. *National Science Foundation*, \$363,000 (1998-2002). Principal Investigator: Thomas Kunz; Co-PI: Cutler J. Cleveland.
- A North American Workshop on the Industrial Transformation Programme of the International Human Dimensions of Global Environmental Change Programme. *National Science Foundation*, \$37,000 (1998). Principal Investigator: Cutler J. Cleveland; Co-PI's: David Angel, Robert Socolow.
- Center for Excellence in Remote Sensing at Boston University, *National Aeronautics and Space Administration*, \$444,000 (1998), Principal Investigator: Curtis Woodcock; Co-PI's: C. Cleveland, M. Friedl, J. Key, R. Kaufmann, R. Myneni, F. El-Baz, A. Strahler, D. Dye, S. Gopal.
- Integrated, Ecological-Economic Modeling of Watersheds and Estuaries at Multiple Scales, *Natural Science Foundation and Environmental Protection Agency*, \$800,000 (1997-2000), Principal Investigator: Charles Hopkinson; Co-PI's: Cutler J. Cleveland and Edward Rastetter
- Consensus Building Workshops: Ecological Tax Reform, Valuation of Natural Capital, Assessing the Role of Human and Natural Capital in Economic Production, and Quality of Life Indicators. *MacArthur Foundation*, \$84,000 (1995-1996). Principal Investigator: Robert Costanza; Co-PI's: Cutler J. Cleveland, Herman Daly.
- Enhancing Quantitative Environmental Analysis in the Social Sciences: Dynamic Modeling and Geographic Information Systems. *National Science Foundation*, \$90,000 (1993). Principal Investigator: Cutler J. Cleveland; Co-PI's: Matthias Ruth, Sheldon Annis, Sucharita Gopal.
- Natural Resources and Economic Development: Four Case Studies. *Institute for the Study of World Politics*, \$12,000 (1993). Principal Investigator: Cutler J. Cleveland; Co-PI: David Stern.
- Estimates of Total Hydrocarbon Recovery in Louisiana Through the Use of Net Energy Techniques (with Robert Costanza), *Louisiana State University Center for Energy Studies*, \$20,000 (1983). Principal Investigator: Robert Costanza; Co-PI: Cutler J. Cleveland.
- Improved Energy Analysis Methodology and Application to Geopressured Gas Resources in Louisiana (with Robert Costanza), *Louisiana State University Center for Energy Studies*, \$10,000 (1982). Principal Investigator: Robert Costanza; Co-PI: Cutler J. Cleveland.

REVIEW PANELS AND ADVISORY BOARDS

- 2016- Advisory Board, Institute for Sustainable Energy, Boston University
- 2009- Steering Committee, Center for Energy and Environmental Sustainability Initiative, Boston University.
- 2004-2010. American Statistical Association's Committee on Energy Statistics, an advisory group to the Department of Energy
- 2005-2006. Steering Committee, Institute for the Environment, Boston University.
- 2005- Social Ethics Advisory Committee, School of Theology, Boston University.
- 2005- Steering Committee, Global Health Initiative, School of Public Health, Boston University.
- 2004- SCOPUS Advisory Board, Elsevier Science, Amsterdam
- 2004- Advisory Board, Environmental Information Coalition, ManyOne Networks and the National Council for Science and the Environment
- 2003-2007: Editor-in-Chief, *Ecological Economics*
- 2001-02. Mayor's Energy Advisory Committee, City of Boston, MA
2001. Council of Energy Advisors, the Gerson Lehrman Group.
1999. Review panel, US Environmental Protection Agency, National Center for Environmental Assessment, peer review of Research Plan for Integrating Ecological Risk Assessment and Economics in Watershed Decision-Making.
1999. Review panel, Partnership for Environmental Research (Decision-making and Valuation for Environmental Policy), US National Science Foundation and Environmental Protection Agency.
1999. Review panel, Board of Higher Education, State of Illinois. Review of proposed interdisciplinary Ph.D. in state university system.
- 1997-2001. Scientific Planning Committee, International Human Dimensions Programme on Global Environmental Change-Industrial Transformation, International Social Science Research Council

1998. Review panel, US Environmental Protection Agency, National Center for Environmental Assessment, Research on Methods for Integrating Ecological and Economic Risk Assessment.

LECTURES

“Climate Change, Child Health, and COVID,” Center for Antiracist Research, Boston University, October 1, 2021
 “The Climate Crisis & the Need for Global, Bold Action,” Boston University Global Programs, November 15, 2021
 “Enhancing Energy, Climate, and Environmental (Data) Justice in Boston,” Boston University Hariri Institute for Computing, March 31, 2021
 “Climate Change and the Prospects for the Rapid Decarbonization of Energy Supplies,” Boston University Board of Trustees, February 25, 2021
 “Leadership in Climate Action: Entrepreneurs, Universities, and Cities,” IDEA 2020 Conference, Boston, MA February 15, 2020
 “Energy Transitions in US Electricity Sector,” Synapse Energy Economics, Cambridge, MA, January 10, 2020.
 “Climate Change and the Transition to Sustainable Energy,” American Meteorological Society Annual Meeting January 15, 2020
 “Accelerating the Energy Transition,” Research on Tap, Boston University, December 4, 2019
 “At the Edge of a Warming World,” Boston Globe, Boston, MA, October 22, 2019
 “Decarbonizing/Electrifying the Building Sector,” New England Electricity Restructuring Roundtable, Boston, MA, June 21, 2019
 “Social Equity in *Carbon Free Boston*,” Boston Advanced Energy Stakeholder Breakfast, Boston, MA, June 6, 2019
 “Summary of *Carbon Free Boston*,” Chamber of Commerce, Boston, MA, May 23, 2019
 “Social Equity in *Carbon Free Boston*,” Green Ribbon Commission, Boston, MA, May 15, 2019
 “Summary of *Carbon Free Boston*,” Northeast Sustainable Energy Association, Boston, MA, March 15, 2019
 “Summary of *Carbon Free Boston*,” A Better City, Boston, MA, February 12, 2019
 “Public Release of *Carbon Free Boston*,” Museum of Science, Boston, MA, January 29, 2019
 “Summary of *Carbon Free Boston*,” Boston Foundation, Boston, MA, January 25, 2019
 “Decarbonizing Boston’s Buildings,” A Better City, Boston, MA, January 23, 2019
 “Summary of *Carbon Free Boston*,” Editorial Board, Boston Globe, Boston, MA, January 23, 2019
 “Summary of *Carbon Free Boston*,” Associated Industries of Massachusetts, Boston, MA, January 16, 2019
 “Urban Decarbonization,” Research on Tap, Boston University, January 14, 2019
 “Summary of Technical Findings for *Carbon Free Boston* Summary Report,” Environment Department, City of Boston January 11, 2019
 “Urban Greenhouse Gas Mitigation,” Environment Massachusetts, Boston, MA, May 15, 2018
 “Carbon Free Boston Overview,” China State Grid Meeting, Institute for Sustainable Energy, Boston University, April 18 2018
 “Carbon Free Boston Overview,” Annual Board Briefing, Institute for Sustainable Energy, Boston University, October 19, 2017
 “Assessing Greenhouse Gas Mitigation in Boston,” Massachusetts Clean Energy Center, September 8, 2017
 “Modeling Urban Greenhouse Gas Mitigation,” European Climate Foundation, Pocantico, New York, April 3, 2017
 “Did I Choose the Wrong Major?” Admissions Office, Boston University, April 7, 2017
 “Carbon Free Boston Update,” Boston Green Ribbon Commission, Boston, MA November 15, 2017
 “Modeling Boston Decarbonization,” Institute for Sustainable Energy, Boston University, November 3, 2016
 “Energy and Sustainability,” Alumni College, College of Arts and Sciences, Boston University, 2016
 “A Systems Perspective on Energy Education,” National Energy Education Summit, Washington, D.C., 2016
 “Energy Transitions,” Boston University Research Education and Communication of Science Program, 2015
 University of Dayton Invited Lecture – “What Stranded Carbon Means for University Endowments,” 2015
 “Teaching Environmental Science in a Digital World,” FETC 2014, Orlando, FL, January 29, 2014
 “Digital textbooks,” British Educational Training and Technology Show, London, January 22, 2014
 “Digital Textbooks,” Campus 2013 Technology, Boston, MA July 2013
 “A Brief History of Energy Influence on Ecological Economics,” Seventh Biennial Conference of the USSEE, University of Vermont, June 10, 2013
 “Fossil Fuels and Climate Change,” Department of Biology, Northeastern University, March 13, 2013
 “Energy Transitions,” 10th National Conference on Science, Policy, and the Environment: The New Green Economy, The National Council for Science and the Environment, Arlington, VA, July 28, 2011.
 “U.S. Energy Policy,” Boston University Academy, February 3, 2011
 Moderator, Plenary Panel Discussion on the Gulf of Mexico Oil Spill, Our Changing Oceans Conference, National Council for Science and the Environment, Washington, D.C., January 19, 2011.

- “What is Energy Independence?” Confronting Our Dependence on Oil: A Policy Forum, Conservation Law Foundation, Natural Resources Defense Council and Environment America, Boston, MA November 30, 2010.
- Introductory Remarks and Moderator, Learning from Disaster: Lessons for the Future From the Gulf of Mexico, School of Law, Boston College, November 12, 2010.
- “An Overview of the Deepwater Horizon Disaster: Implications for U.S. Energy Policy,” Boston University School of Management, November 5, 2010.
- “An Overview of the Deepwater Horizon Disaster: Implications for U.S. Energy Policy,” Energy Club, Environmental Student Organization, Boston University, October 14, 2010.
- “Energy Transitions: An Overview,” Golisano Institute for Sustainability, Rochester Institute of Technology, October 25, 2010.
- “The Future of Energy,” Office of Development and Alumni Relations, Boston University, Portsmouth NH, October 6, 2010.
- “Sustainability in Higher Education,” Clafin Society, Boston, MA, April 20, 2010.
- “Energy Transitions” College of Engineering, Boston University, January 27, 2010.
- “The Road from Copenhagen,” Frederick S. Pardee Center for the Study of the Longer-Range Future, April 5, 2010.
- “Collaboration in Knowledge Creation,” 12th Annual Atmospheric Science Librarians International Conference, Phoenix, AZ, January 14, 2009.
- “Energy and the Sustainability of U.S. Agriculture,” Symposium on the Future of Food In the U.S., Agricultural Sustainability Institute, University of California at Davis, Davis, CA, March 24, 2009.
- Ten Fundamental Principles of Energy, Department of Architecture, Massachusetts Institute of Technology, Cambridge, MA, April 13, 2009.
- “Ecological Footprints: From Global Impact to Local Action,” College of Arts and Sciences, Boston University, Boston, MA April 24, 2009.
- “A Communications Portal for the Knowledge Network for Sustainable Development,” Pardee Center, Boston University, Boston MA, July 16, 2009.
- “Sustainability at Boston University, Boston University Executive Leadership Council, September 24, 2009.
- “Interdisciplinary Research Opportunities at BU Related to Sustainability,” Office of Development and Alumni Relations, Boston University, November 2009.
- “Energy 101: Ten Things Everyone Should Know About Energy,” “The Future of Energy,” Department of Environmental Health, School of Public Health, Boston University, November 21, 2008.
- “Core Principles and Energy Solutions,” The Rubenstein School of Environment and Natural Resources and the Gund Institute for Ecological Economics, University of Vermont, November 3, 2008.
- “The Future of Energy,” Pardee Center, Boston University, September 21, 2008.
- “Fundamental Principles of Energy and Climate Change,” SK Energy Group (S. Korea), Executive Leadership Training Program, School of Management, Boston University, June 18, 2008.
- “Overview of and Rationale for CEREL,” Inaugural Conference The Council of Energy Research and Education Leaders University of California, Los Angeles, 12 June 2008
- “Energy and Sustainability,” Seattle Biotech Legacy Foundation, Seattle, WA, March 12, 2008.
- “Energy 101: Ten Things Everyone Should Know About Energy,” Institute for Children’s Environmental Health and Seattle Biotech Legacy Foundation, Seattle, WA, March 12, 2008
- “Science Writing for the Encyclopedia of Earth,” Department of Environmental Studies, Mt Holyoke College, Hadley, MA, February 11, 2008.
- “Ten Fundamental Principles of Energy,” Department of Environmental Studies, Mt Holyoke College, Hadley, MA, February 11, 2008.
- “Ecological Footprints: From Global Impact to Local Action,” Tu B’Shevat Lecture, Temple Shir Tikvah Winchester, MA, 3 February 2008.
- “The Next Energy Transition,” Bayer Environmental Science, Inc., Winter Lawn Care Conference, Sturbridge, MA, January 23, 2008.
- “Overview of Council of Energy Research and Education Leaders,” Annual Meeting of the National Council for Science and the Environment, Washington D.C., January 16, 2008
- “What Happens After the Oil Runs Out?” Metcalf Institute for Marine and Environmental Reporting, Graduate School of Oceanography, University of Rhode Island, June 15, 2007.
- “Energy Quality, Net Energy, and the Coming Energy Transition” Second Roundtable on Energy, Climate Change, and Foreign Policy: A North American Perspective, Ministry of Environment, Ottawa, Canada, 26-27 February 2007.

- "The Encyclopedia of Earth: A New Mode of Environmental Communications" ManyOne Networks and the Digital Universe Foundation, Salt Lake City, UT, 27 March 2007.
- "Climate Science as Pointillism," Introduction to viewing of "An Inconvenient Truth," Boston University February 4, 2007.
- "Fundamentals of Energy Transitions," Annual Meeting of the Directorate of Materials Research Science and Engineering Center, the National Science Foundation, Washington, D.C., December 8, 2006.
- "Reflections of a Non-Energy Economist on Energy Economics," United States Association of Energy Economics, Ann Arbor, MI September 26, 2006
- "The Importance of Net Energy for the Peak Oil Debate," Symposium on Peak oil and the Next Energy Transition," George Washington University, Washington D.C., May 8, 2006
- "The SAGE World Oil Model," U.S. Department of Energy, Washington D.C., October 5, 2006
- "The Economic Value of the Pest Control Service Provided by the Brazilian Free-tailed Bat in the Wintergarden region of South-Central Texas," Workshop on the Valuation of Ecosystem Services, Gund Institute for Ecological Economics, University of Vermont, Burlington, VT, October 14, 2006.
- ESRI User Conference, "The Launch of the Earth Portal," San Diego, CA, July 25, 2005.
- The National Library of Medicine, "An Overview of the Earth Portal," Washington, D.C., October 4, 2005.
- "The State of Ecological Economics," Canadian Society of Ecological Economics, York University, Toronto, October 29, 2005.
- Discussant, Session on Urbanization, Global Health - A Bridge to the Future, Boston University School of Public Health, November, 18, 2005.
- The British Embassy and the National Council for Science and the Environment, "An Overview of the Earth Portal," Washington, D.C., January 12, 2006.
- The Eurasia Group, "Energy, Economic and Environmental Security," March 26, 2004, New York, NY.
- "Modeling the Agricultural Pest Control Service Provided by Brazilian Free-tailed Bats (*Tadarida brasiliensis*) in the Winter Garden Region of South Texas." " 34th Annual North American Symposium on Bat Research Salt Lake City, Utah, October 2004
- "Community and Individual Responses of Brazilian Free-tailed Bats (*Tadarida brasiliensis*) to Avian Predation." 34th Annual North American Symposium on Bat Research Salt Lake City, Utah, October 2004
- National Science Foundation Advisory Committee on Environmental Research and Education, "Complex Ecological-Economic Systems: Research and Education Priorities," April 16, 2003.
- An Overview of Issues Associated With the Economic Assessment of the Pest Control Service Provided by the Mexican Free-tailed Bat (*Tadarida brasiliensis*) in South Central Texas, National Center for Ecological Analysis and Synthesis, UC/Sanata Barbara, February 4, 2003.
- Energy and the Human Development Index (With J. Ahlen), U.S. Society for Ecological Economics, Second Biennial Meeting, Saratoga Springs, New York, May 22-24 2003.
- Energy Quality, Net Energy and the Coming Energy Transition, U.S. Society for Ecological Economics, Second Biennial Meeting, Saratoga Springs, New York, May 22-24 2003.
- Graduate School of Geography, Clark University, "Oil and War: The Implications of a War with Iraq on Energy Prices and the Economy," February 22, 2003.
- Dept of Geography and Center for Energy and Environmental Studies, Boston University, "Oil and War: The Implications of a War with Iraq on Energy Prices and the Economy," February 10, 2003.
- Global Development and Environment Institute, Tufts University, "Energy Quality, Net Energy and the Coming Energy Transition," December 15, 2002.
- Economics of Scarcity: State of the Debate, Workshop on Scarcity and Growth in the New Millenium, Resources for the Future, Washington, D.C., November 18, 2002.
- Fletcher School of Law and Diplomacy, Tufts University, "Energy Security," March 22, 2002.
- The Center for Talented Youth at Johns Hopkins University, Energy, "Energy, National Security, and the Future of America," Boston University, Boston, MA, November 18, 2001.
- Fletcher School of Law and Diplomacy, Tufts University, "US Oil Production and Energy Policy," October 15, 2001.
- Availability of Fossil Fuels to Meet Future Needs, Symposium on Long-Term Carbon Management, International Petroleum Industry Environmental Conservation Association, Boston, MA 15-16 October, 2001.
- The Tellus Institute, Boston, MA, "The Determinants of U.S. Oil Production," April, 2000.
- Emirates Center for Strategic Studies and Research, Abu Dhabi, United Arab Emirates, "Energy Quality, Net Energy and the Coming Energy Transition," October 8, 2000.
- A Preliminary Economic Assessment of the Pest Control Service Provided by the Mexican Free-tailed Bat (*Tadarida brasiliensis*) in South Central Texas, North American Symposium on Bat Research, Miami, FL (September 28, 2000).

- Division of Biological Sciences, University of the Virgin Islands, "Energy Use, Energy Prices and the Economy: Déjà Vu All Over Again," May 5, 2000.
- United States Environmental Protection Agency, "Energy, Materials, and the U.S. Economy: A Long Run Perspective," April 13, 2000.
- United States Department of Energy, "Using the Hubbert Curve to Forecast Oil Production," April 12, 2000.
- Fletcher School of Law and Diplomacy, Tufts University, "What Can the Hubbert Curve Tell Us About Future Oil Production and Prices? April 11, 2000.
- SUNY School of Environmental Science and Forestry, "Energy and the Economy: A Long Run View" March 21, 2000.
- SUNY School of Environmental Science and Forestry, "Nuclear Power: A Faustian Bargain?" March 21, 2000.
- Department of Economics, Rensselaer Polytechnic University, "Aggregation and the Role of Energy in the Economy," January 31, 2000.
- Massachusetts Institute of Technology, Institute for International Studies, "The Future of Oil," December 5, 2000.
- Banc of America Securities, "What Can Hubbert's Curve Really Tell Us About Future Oil Production and Prices?," Houston, TX, June 29, 1999.
- Ecological-Economic Modeling of Natural Pest Control Services, Bat Conservation International and Texas Parks and Wildlife Commission, Johnson City, TX (December 7, 1999).
- Greening of Industry Network, Annual International Meeting, Kenan-Flagler Business School, University of North Carolina, "Valuing the Depletion of U.S. Petroleum Reserves: A Comparison of Alternative Approaches (November 16, 1999).
- Open Science Meeting, International Human Dimensions Programme on Global Environmental Change - Industrial Transformation, Amsterdam, The Netherlands: "Material Flows Analysis as a Tool for Sustainability Analysis," (February 25, 1999).
- Scientific Planning Committee, Programme on Industrial Transformation, International Human Dimensions Programme on Global Environmental Change, "Indicators of Dematerialization and the Materials Intensity of Use: What Do they Tell Us?" Amsterdam, The Netherlands, February 12-13, 1998.
- North American Meeting on the Industrial Transformation Programme of the International Human Dimensions of Global Environmental Change Programme, Boston, MA: "An Overview of Industrial Transformation," (September 24, 1998).
- United States Geological Survey, Science, Sustainability, and Natural Resources Stewardship--The USGS and Research on Materials and Energy Flows, Reston, VA: "Major Issues in Materials and Energy Flows: A Research Perspective," (November 3, 1998).
- Institute for Social Research of the Fundação Joaquim Nabuco, and the Ministry of the Environment, Water Resources, and Legal Amazon, "When, Where, and By How Much Do Biophysical Limits Constrain the Economic Process,?" April 22-25, 1996, Recife, Brazil.
- International Society for Ecological Economics, Fourth Biennial Meeting, Boston, MA: "Curriculum Developments in Ecological Economics," (August 7, 1996).
- International Society for Ecological Economics, Fourth Biennial Meeting, Boston, MA: "When, Where, and By How Much Do Biophysical Limits Constrain the Economic Process? The Contribution of Nicholas Georgescu-Roegen to Ecological Economics," (August 4, 1996).
- United States Department of Energy, Energy Information Administration, 1996 National Energy Modeling System/National Energy Outlook Conference, Washington, D.C., "Natural Gas in the U.S.: How Far Can Technology Stretch the Resource Base?," (March, 25, 1996).
- Ecosystems Research Center, Woods Hole, MA: "Resource Degradation and Technical Change in US Agriculture," (April 18, 1995).
- United States Department of Energy, Energy Information Administration, The Implications the Commodity Pricing of Natural Gas for EIA's Mid-term Forecasts: A Workshop Promoting An Exchange of Ideas Among Resource Analysts, Economists, and Forecasters, Washington, D.C., "Modeling the Natural Gas Market: Validation Against the Historical Record," (August 17, 1995).
- United States Department of Energy, Office of Policy Analysis, Boston, MA, "Energy and Industrial Competitiveness," (September 12, 1994).
- Marsh Chapel, Boston University, Boston, MA: "What Do Humans Owe Other Species: The Debate Over Species Extinction," (February 15, 1994).
- International Society for Ecological Economics, Third Biennial Meeting, San Jose, Costa Rica: "Models in Ecological Economics," (October, 25, 1994).
- International Society for Ecological Economics, Third Biennial Meeting, San Jose, Costa Rica: "Teaching and Curriculum Development in Ecological Economics," (October, 27, 1994).

- Department of Biology, Boston University, Boston, MA: "The Ecological-Economics Basis of U.S. Agriculture: Can the Success of the Past be Sustained?" (November 15, 1993).
- Advanced Education Programme, COMETT Programme of the Commission of European Communities, Urbino, Italy: "The Biophysical Basis of Agriculture: The Reallocation of Work Between Human and Natural Capital," (May 24, 1993).
- Coolidge Center for Ecological Leadership, Boston, MA: "Ecological Economics: Uniting the Two Households of Humankind," (March 25, 1993).
- Canadian International Development Agency and the Institute for Research on Environment and Economy, University of Ottawa, Ottawa, Ontario, Canada: "The Foundations of Ecological Economics," (November 8, 1992).
- American Solar Energy Society Roundtable: Alternative Transportation Fuels and Vehicles, Plenary Speaker, Washington, D.C.: "Energy and Environmental Constraints to the Increased Production of Alternative Liquid Fuels," (April 28, 1992).
- American Association for the Advancement of Science, Symposium on Environmental Modeling and Policy, Chicago, IL (with Robert Herendeen): "Wide-Ranging Environmental Impact Assessment: Where Are We?" (February 7, 1992).
- Beijer Institute for Ecological Economics, Royal Swedish Academy of Sciences, Stockholm, Sweden: "Energy and Resource Flows in Agriculture: Implications for the Sustainability of World Agriculture," (August 3, 1992).
- Technical Research Centre of Finland, Espoo, Finland: "Resource Depletion and Economic Growth in Industrial Economies: The 1990's and Beyond," (June 8, 1992).
- Parsons Laboratory for Water Resources and Hydrodynamics, Massachusetts Institute of Technology, Boston, MA: "Public Policy and U.S. Crude Oil Production: Why Attempts to Boost Production Will Fail and Hurt the Economy and the Environment," (May 11, 1992).
- American Solar Energy Society, Washington, D.C.: "Energy and Environmental Constraints to the Increased Production of Alternative Liquid Fuels," (April 28, 1992).
- Programa de Ecologia, Pesquerias y Oceanografia del Golfo de Mexico, Campeche, Mexico: "Biophysical Economics: Theory and Techniques as Applied to Environmental Aspects of Free Trade Agreements," (February 24, 1992).
- Center for Talented Youth, The Johns Hopkins University, Baltimore, MD: "The Role of Environmental Studies in Undergraduate Liberal Arts Curriculum," (Talk given at the 1991 College Colloquium at Boston University, November 3, 1991).
- International Association of Energy Economists, Cambridge, MA: "Policies to Increase U.S. Oil Production: Likely to Fail, Damage the Economy and Damage the Environment," (September 25, 1991).
- Tufts University, Lincoln Filene Center: "The Economic and Environmental Impacts of Policies to Boost U.S. Oil Production," (March 20, 1991).
- Center for Energy and Environmental Studies, Boston University, Conference on Technological and Environmental Requisites and Consequences of Transnational Networks, Boston, MA (with Robert Kaufmann): "U.S. Energy Policy and Crude Oil Production: Why Attempts to Boost Production will Fail and Hurt the Economy and the Environment," (November 4, 1991).
- Department of Systems Ecology, Stockholm University, Sweden: "Oil, War, and U.S. Public Policy," (October 12, 1990).
- International Society for Ecological Economics, Washington, D.C.: "Natural Resource Scarcity and Economic Growth Revisited: Economic and Biophysical Perspectives," (May 21, 1990).
- Boston University, Division of Student Affairs, Wellness Center, Freshman Empowerment Program: "Environmental Consciousness: Making the Grass Greener on Your Side of the Fence," (September 6, 1990).
- Boston University, Office of Special Programs, Greenleaf Program: "Earth Day 1990: How Far Have We Come?" (August 8, 1990).
- U.S. Forest Service, St. Paul, MN: "The Scarcity of U.S. Forest Products: Economic and Biophysical Perspectives," (April 2, 1990).
- Association of American Geographers, Annual Meeting, Toronto, Canada. (Finalist, Warren Nystrom Dissertation Award for the Best Ph.D. Dissertation in Geography): "Alternative Analytical Models of the Oil Discovery Process," (April, 1990).
- Ecosystems Research Center, Woods Hole, MA: A Biophysical Perspective of Natural Resources and Economic Growth," (January 31, 1990).
- Department of Systems Ecology, University of Stockholm, Sweden: "Biophysical Economics: Relevance for Sustainable Economic Development," (June 1, 1990).

- University of Montana, Flathead Lake Biological Station: "Diminishing Returns in the U.S. Oil Supply Process," (July, 1989).
- Swedish Forestry University, Garpenberg, Sweden: "Energy and Resource Quality: A Biophysical Perspective," (May 29, 1989).
- Swedish University of Agricultural Sciences, Uppsala, Sweden: "Energy Analysis and Renewable Energy Resources," (May 22, 1989).
- Association of American Geographers, Annual Meeting, Baltimore, MD: "Net Energy Analysis of Solar Parabolic Collectors," (April, 1989).
- Interdisciplinary Issues Forum, Boston University, Boston, MA: "Is There An Environmental Ethic?" (April 12, 1988).
- Association of American Geographers, Annual Meeting, Phoenix, AZ: "Physical and Economic Models of Natural Resource Scarcity," (April, 1988).
- Regional Science Association, Annual Meeting, Baltimore, MD: "Physical and Economic Models of Natural Resource Scarcity: Theory and Application to Petroleum Development and Production in the Lower 48 U.S.," (March, 1988).
- International Association of Energy Economists, Houston, TX: "Diminishing Returns and the Cost of Developing and Producing Oil in the U.S., 1955-1986," (November 1, 1988).
- Department of Geology, Boston University, Boston, MA: "The Optimum Production of Oil and Gas Reserves in the U.S.," (March 23, 1988).
- Outing Club, Boston University, Boston, MA: "The Environmental Impacts of Acid Deposition," (1988).
- Association of American Geographers, Annual Meeting, Minneapolis, MN: "Physical and Economic Models of Petroleum Development and Production in the Lower 48 U.S.," (April 1987).
- American Society of Mechanical Engineers, Annual Meeting, Session on Thermodynamics and Energy Systems, Boston, MA: "Solar Parabolic Troughs: Succeeding Generations are Better Net Energy Producers," (December 16, 1987).
- International Association of Energy Economists, Chicago, IL: "Energy and the U.S. Economy: A Biophysical Perspective," (November 12, 1985).
- Argonne National Laboratory, Center for Transportation Research: "Energy and the U.S. Economy: A Biophysical Perspective," (November 12, 1985).
- Solar Energy Research Institute, Golden, CO: "Net Energy Analysis of Solar Parabolic Collectors," (October 24, 1985).
- Sigma Xi Scientific Society, University of Illinois, Urbana, IL; Finalist, Sigma Xi Publication Award: "Energy and the U.S. Economy: A Biophysical Perspective," (April, 1985).
- Integration of Ecology and Economics - An Outlook for the Eighties, The Marcus Wallenberg Foundation for International Cooperation in Science, Stockholm, Sweden (with C. Hall and R. Kaufmann): "Time Series Analysis of Energy and the U.S. Economy," (September 1, 1982).
- International Society for Ecological Modeling, Third Conference on the State-of-the-Art in Ecological Modeling, Fort Collins, CO (with R. Costanza): "Net Energy Analysis of Geopressed Gas Resources in the U.S. Gulf Coast Region," (May 24, 1982).
- International Society for Ecological Modeling, Session of the Net Energy Analysis, Louisville, KY (with C. Hall and M. Berger): "Yield Per Effort as a Function of Time and Effort for U.S. Petroleum, Uranium, and Coal," (April 20, 1981).
- International Society for Ecological Modeling, Session on Energy and Systems, Louisville, KY (with C. Neill and J. Day): "The Impact of Artificial Canals on Land Loss in Barataria Bay, Louisiana," (April 20, 1981).

PROFESSIONAL WORKSHOPS AND PANELS

- Panel Discussion, Does GDP Measure Human Progress? Pardee School of Global Studies, October 26, 2016
- Panel Discussion, Conference on Sustainability Research, Boston University, May 9, 2016
- Panel Discussion on University Divestment from Fossil Fuels, University of Dayton, 2015
- Panel Discussion on the Environmental Reporting and the Media, Metcalf Institute for Marine and Environmental Reporting, Graduate School of Oceanography, University of Rhode Island, June 15, 2007.
- Stanford Energy Modeling Forum (EMF 20: Fuel Diversity, Natural Gas and North American Energy Markets, 2002.
- Workshop on Scarcity and Growth in the New Millennium, sponsored by Resources for the Future, Washington, D.C., November 23, 2002.
- Workshop on University Energy Research, sponsored by the Carnegie Mellon Electricity Industry Center and the Program on Energy and Sustainable Development at Stanford, American Association for the Advancement of Science, Washington, D.C., April 29, 2002.
- Workshop on the Annual Environment Outlook, sponsored by the Environment Division, Asian Development Bank, Rocky Mountain Institute, Snowmass, CO, September 14, 2000.
- Workshop on the Agricultural Value of Mexican Free-tailed Bats in Texas, sponsored by Conservation International and the Texas Parks and Wildlife Commission, Selah Ranch, Johnson City, Texas, December 5-7, 1999.
- The North American Workshop on the Industrial Transformation Programme of the International Human Dimensions of Global Environmental Change Programme. Boston University, September 24-25, 1998.
- Workshop on "Industrial Transformation," sponsored by the Programme on Industrial Transformation, International Human Dimensions Programme on Global Environmental Change, Amsterdam, The Netherlands, February 12-13, 1998
- Workshop on "Economic Modeling of Sustainable Development," sponsored by the Free University and the Tinbergen Institute, Amsterdam, Dec. 20, 1996.
- Workshop on "Assessing the Role of Human and Natural Capital in Economic Production," sponsored by the MacArthur Foundation and the Center for Energy and Environmental Studies, Boston University, Boston, MA, August 2-4, 1996.
- Workshop on the Environment, Development, and Government Policy, organized by the Institute for Social Research of the Fundação Joaquim Nabuco, under the sponsorship of the Ministry of the Environment, Water Resources, and Legal Amazon, April 22-25, 1996, Recife, Brazil.
- United States Department of Energy, Energy Information Administration, The Implications the Commodity Pricing of Natural Gas for EIA's Mid-term Forecasts: A Workshop Promoting An Exchange of Ideas Among Resource Analysts, Economists, and Forecasters, Washington, D.C. (August 17, 1995).
- NSF Research Internship Program in Science and Engineering, Boston University, Boston, MA (July 26, 1995).
- United Nations Environment Programme and the World Bank, Workshop on Environmental Impacts of Structural Adjustment Programmes, United Nations, New York (March 20-21, 1995).
- United Nations Environment Programme and the World Bank, Expert Group Meeting on Environmental Reviews of Trade Policies, United Nations, New York (March 21-23, 1995).
- President's Council for Sustainable Development, Workshop to Define Principles of Sustainability in Higher Education, Essex, MA (February 24-27, 1995).
- National Energy Plan Public Meeting, held by the United States Department of Energy, Office of Policy Analysis, Massachusetts Institute of Technology, Boston, MA (September 12, 1994).
- Workshop on "Property Rights and the Performance of Natural Resource Systems," sponsored by the Beijer Institute for Ecological Economics, the Royal Swedish Academy of Sciences, and the International Society for Ecological Economics, Stockholm, Sweden, August 27-29, 1994.
- Workshop on "Evaluation of Impacts and Priority Setting in Environmental Management," sponsored by the Advanced Education Programme, COMETT Programme of the Commission of European Communities, and the Chemical Industry Federation of Finland, Urbino, Italy, May 24-29, 1993.
- Workshop on "Property Rights and the Performance of Natural Resource Systems," sponsored by the Beijer Institute for Ecological Economics, the Royal Swedish Academy of Sciences, and the International Society for Ecological Economics, Stockholm, Sweden, September 2-4, 1993.
- Workshop on Building a New England Collaborative on Global Environmental Change, the George Perkins Marsh Institute, Clark University, Worcester, MA, November 14-15, 1992.
- Workshop on "What Environmentalists Need From Economists," Center For Environmental Management, Tufts University, Medford, MA, November 11-13, 1992.

- Workshop on "Investing in Natural Capital: A Prerequisite for Sustainability," sponsored by the Beijer Institute for Ecological Economics, the Royal Swedish Academy of Sciences, and the International Society for Ecological Economics, Stockholm University, Stockholm, Sweden, August 7-10, 1992.
- Workshop on "Evaluation of Impacts and Priority Setting in Environmental Management," sponsored by the Advanced Education Programme, COMETT Programme of the Commission of European Communities, and the Chemical Industry Federation of Finland, Turku, Finland, June 8-12, 1992.
- Atelier Course on the Proposed U.S. Mexico Free Trade Agreement, Programa de Ecologia, Pesquerias y Oceanografia del Golfo de Mexico, Campeche, Mexico, February 24-28, 1992.
- Workshop on the Design of a Curriculum in Ecological Economics, sponsored by the International Society for Ecological Economics, Tarrytown, NY, June 17-19, 1991.
- Workshop on the Ecological Economics of Sustainability, sponsored by the International Society for Ecological Economics, The Aspen Institute, Wye Island, Maryland, May 24-26, 1990.

CONFERENCES AND WORKSHOPS ORGANIZED

- Boston World Oil Conference, Boston, MA, October 26-27, 2006 (Co-organizer with R. Kaufmann)
- The inaugural meeting of the Council of Energy Deans and Directors, National Council for Science and the Environment, Washington, D.C., January, 12 2006.
- Environmental Science and Policy, co-hosted by the Center for Energy and Environmental Studies, Boston University and the Center for Talented Youth at Johns Hopkins University, Boston, MA, November 18, 2001.
- Energy and Environmental Research at Boston University, a workshop prepared for a management delegation from Fuji Heavy Industries, Inc., Japan, Boston University School of Management, May 24, 2001.
- A North American Conference on the Industrial Transformation Programme of the International Human Dimensions of Global Environmental Change Programme. Boston University, September 24-25, 1998 (35 participants).
- Fourth international meeting of the International Society for Ecological Economics, *Designing Sustainability: Building Partnerships Among Society, Business, and the Environment*, Sponsored by the Center for Energy and Environmental Studies and held at Boston University, August 4-7, 1996 (700 participants from 35 nations).

CONFERENCE SESSIONS ORGANIZED

- Energy and Ecological Economics, U.S. Society for Ecological Economics, Second Biennial Meeting, Saratoga Springs, New York, May 22-24 2003.
- Transformation Tools Core Project, Open Science Meeting, International Human Dimensions Programme on Global Environmental Change - Industrial Transformation, Amsterdam, The Netherlands (February 26, 1999).
- International Society for Ecological Economics, Fourth Biennial Meeting, Boston, MA: Panel Discussion on the Role of Human and Natural Capital in Economic Production," (August 5, 1996).
- Energy and World Security. March, 1991. Annual New England Environmental Conference, Tufts University.
- Energy Modeling. 1987. Annual Meeting of Association of American Geographers.

REFEREE

Journals: *The Energy Journal, Energy Policy, Energy, AMBIO, Agriculture, Ecosystems and Environment, Ecological Economics, Resource and Energy Economics, Energy, Renewable Energy, Energy Economics, Economic Geography*

Book Publishers: *McGraw-Hill, Routledge, Earthscan, MIT Press, Wiley, Elsevier, Springer*

MEDIA PRESENTATIONS

More than 200 presentations or interviews as an energy and/or environmental expert in local, national and international media.

CONSULTING

Western Resource Associates
United Nations Department of Economic and Social Affairs
Association for the Study of Peak Oil-USA
Energy Information Administration, U.S. Dept. of Energy
The Wilderness Society
Asian Development Bank, Environment Division
Fisheries Centre, University of British Columbia
Board of Higher Education, State of Illinois
Roxbury Community College, Boston, MA
United States Department of Energy
Charles River Associates, Boston, MA
Technical Research Centre of Finland, Espoo, Finland
U.S. Environmental Protection Agency
Illinois Department of Energy and Natural Resources
Carrying Capacity, Inc., Washington, D.C.

PROFESSIONAL SERVICE

Implementation Advisory Committee, Global Warming Solutions Act, Commonwealth of Massachusetts (2017-)
Data and Modeling Subcommittee, Implementation Advisory Committee, Global Warming Solutions Act, Commonwealth of Massachusetts (2017-)
Presenter at annual student recruitment open house events, College of Arts and Sciences, (2014-)
Co-Chair, Boston University Committee on Campus Sustainability
Task Force on Recycling and Campus Environment, Boston University
Task Force on the Institute for the Environment, Boston University
Steering Committee, Global Health Initiative, School of Public Health, Boston University.
Editor-in-Chief, *Ecological Economics* (Elsevier Science)
Board of Advisors, School for Field Studies (1995-present).
Vice-President, International Society of Ecological Economics (1995-1996).
Editorial Board, *Ecological Economics*, International Society of Ecological Economics (1993-present).
Board of Directors, Global Habitat Project, Boston, MA.
Environmental Curriculum Development Committee, International Society of Ecological Economics (1991-1992).
Board of Directors, Association of American Geographers Energy Specialty Group (1987-1990).

STUDENT SUPERVISION

Completed Ph.D. Theses:

Karina Véliz Rojas (First Reader), "The Economic Impact of Climate Change on Electricity Demand in the United States," Department of Earth and Environment, Boston University (2013).
Peter O'Connor (First Reader), "Aspects of Energy Transitions: History and Determinants," Department of Earth and Environment, Boston University (2013).
Christine Wörten (First reader). Economic and Technological Aspects of the Market Introduction of Renewable Power Technologies," Department of Geography, Boston University (2002).
Peter Horst Tydemers (External Examiner). "Salmon and Sustainability: The Biophysical Cost of producing Salmon Through the Commercial Fishery and the Intensive Salmon Culture Industry," Department of Resource Management and Environmental Studies, the University of British Columbia (2000).
Xie Zhijun (first reader). "The Economic and Environmental Effects of Utility Deregulation in China," Department of Geography, Boston University (2000).
Maria Eugenia Ibararan (first reader). "Taxing Fossil Fuels to Reduce Carbon Emissions: A Computable General Equilibrium Analysis of a Revenue-Neutral Tax Reform in Mexico," Department of Geography, Boston University (1999).

- Miguel Bunuel (first reader). "Technology, Environmental Policy, and Natural Resource Scarcity: Three Essays," Department of Geography, Boston University (1999).
- Felix Ammah-Tagoe (first reader). "A Logit-Probit Model of Household Fuel Use Choices in Ghana," Department of Geography, Boston University (1995).
- David Stern (first reader). "Natural Resources as Factors of Production: Three Case Studies," Department of Geography, Boston University (1994).
- Veronica Passos (first reader). "The Socioeconomic, Environmental, and Institutional Determinants of the Success of Agricultural Development Projects on Deforested Land in Amazonia, Brazil," Department of Geography, Boston University (1992).
- Carl Folke (Invited Opponent for Dissertation Defense). "Evaluation of Ecosystem Life-Support in Relation to Salmon and Wetland Exploitation," Department of Systems Ecology, Stockholm University, Sweden (1990).
- Joan Welch (third reader). "An Assessment of Socioeconomic and Land-Use Histories that Influence Urban Forest Structure: Boston's Neighborhoods of Roxbury and North Dorchester," Department of Geography, Boston University (1990).
- David Kummer (third reader). "Deforestation in the Post-War Philippines," Department of Geography, Boston University (1990).
- John Mahoney (third reader). "The Regional Hazardous Waste Management Problem: A Location-Allocation Perspective," Department of Geography, Boston University (1990).

Master's Theses:

- Jennifer Jacobus (first reader). "Certification of Sustainable Products: A Comparative Study of Forest and Fishery Products." Department of Geography, Boston University (1997).
- Courtenay Sprague (third reader). "Integrated Measures for Debt and Resource Management in Costa Rica: Policy Recommendations." Center for Energy and Environmental Studies, Boston University (1994).
- Ronald Montesi (first reader). "Economic and Biophysical Measures of the Scarcity of U.S. Forest Products," Department of Geography, Boston University (1990).

Undergraduate Theses and Work for Distinction:

- Rachel Eckles, (first reader), "Greenhouse Gas Emissions From Alternative Solid Waste Disposal Alternatives," Department of Earth and Environment (2017).
- Patricia Zundritsch, (first reader), "Employment Impacts of Renewable Energy," Department of Earth and Environment (2016).
- Nicholas Dahlberg, (first reader), Russian Environmental Policy Since 1990, Department of Geography and Environment, Boston University (2010).
- Lauren Adams (second reader), "The Ability of Local Governments to Engage in Sustainable Energy Policy: A Comparative Approach, Department of Geography, Boston University (2005).
- Catherine Campbell (first reader). "A Comparative Analysis of Proposals to Revise the Clean Air Act," Center for Energy and Environmental Studies, Boston University (2003).
- Jenny Ahlen (first reader). "The Economic Valuation of *Tadarida brasiliensis mexicana* and the Spatial Distribution of *Helicoverpa zea*," Center for Energy and Environmental Studies, Boston University (2002).
- Chad Monfreda, "The Role of Distribution of *Helicoverpa zea* in the Provision of Pest Control Services by *Tadarida brasiliensis*," Center for Energy and Environmental Studies, Boston University (2001).
- Frederika Howe (first reader). "A Scientific Basis for Revising the Endangered Species Act," Center for Energy and Environmental Studies, Boston University (1999).
- Linus Chen (first reader). "Evaluation of Alternative Strategies for Biodiversity Management," Center for Energy and Environmental Studies, Boston University (1998).
- Krista Fingerhut (first reader). "Economic and Environmental Consequences of Sustainable Agriculture," Center for Energy and Environmental Studies, Boston University (1996).
- Susan Costabile (first reader). "Interdependencies Between the Depletion of Minerals and Fuels: The Case of Phosphate Production in the U.S.," Center for Energy and Environmental Studies, Boston University (1995).
- Jodi Tick (first reader). "A Dynamic Simulation Model of the Energy and Environmental Impacts of Alternative of Household Fuel Use in Kenya," Center for Energy and Environmental Studies, Boston University (1993).

- Kristen Ritter (second reader). "The Energy and Environmental Determinants of Pulp Prices in the US." Center for Energy and Environmental Studies, Boston University (1999).
- Roberto Frau (second reader). "A Biophysical Analysis of Coffee Processing In Puerto Rico and Costa Rica." Center for Energy and Environmental Studies, Boston University (1999).
- Suzanne Keppeler (second reader). "The Response of Electric Utilities to the 1990 Revision of the Clean Air Act," Center for Energy and Environmental Studies, Boston University (1994)
- Diana Parmer (second reader). "The Effectiveness of a Carbon Tax Versus a Btu Tax In Reducing Carbon Dioxide Emissions," Center for Energy and Environmental Studies, Boston University (1994).
- Holley Marie Morehouse (third reader). "Modeling a Food Resource System for America's Homeless Hungry: Location-Allocation Modeling for a Meso-Scale Food Relief Program," Department of Geography, Boston University (1992).
- James Sanchirico (third reader). "An Economic and Environmental Assessment of the Value of the Northern Forests in New England," Department of Economics, Boston University (1991).

ACADEMIC ADMINISTRATIVE WORK

- 2009-2011. Associate Chairman, Department of Geography and Environment, Boston University
2006. Director of Graduate Studies, Center for Energy and Environmental Studies, Boston University.
- 1993-2005. Director, Center for Energy and Environmental Studies, Boston University. Administration of an interdisciplinary academic center that grants two BA degrees and three MA degrees in the environmental field. Oversight of all academic programs, administration of budget, faculty hiring, tenure and promotion
- 1998-99. Director of Graduate Studies, Center for Energy and Environmental Studies, Boston University.
- 1991-1992 Chairman, Undergraduate Interdisciplinary Program in Environmental Studies.
- 1987-1989. Director of Graduate Studies, Center for Energy and Environmental Studies, Boston University.

UNIVERSITY COMMITTEE WORK

- 2017-2018. General Education Committee, HUB Program, Boston University
- 2009-2012. Co-Chair, Boston University Committee on Sustainability
- 2015-2106. Search Committee, Department of Earth and Environment
- 2008-2009. Social Science Curriculum Committee, College of Arts and Sciences
2003. Committee on Academic Tenure and Promotion, College of Arts and Sciences
1999. Search Committee, Department of Biology
1997. Committee on Academic Tenure and Promotion, College of Arts and Sciences
1997. Search Committee, Department of International Relations
1996. Search Committee, Department of Biology, Department of Geography
1994. Search Committee, Department of Biology, Department of Geography
- 1990-1991, 1991-1992. Graduate Admissions Committee, Department of Geography.
- 1990-1992. Committee on Academic Standards, Graduate School of Arts and Sciences
1992. Search Committee, Department of Geography
1990. Search Committee, Department of Geography

COURSES TAUGHT

- Energy Transitions (CAS GE 560)
- Intermediate Environmental Analysis (CAS GE 309)
- Energy, Environment and Society (CAS GE 519)
- Natural Resource Scarcity and Economic Growth (CAS GG 518)
- Alternative Energy and Environmental Futures (CAS GG 304)
- The Environment: Physical Principles and Policy (CAS GG 510)
- Introduction to Environmental Science (CAS GG 100)
- Energy Analysis and Renewable Energy Resources (at the Swedish University of Agricultural Sciences, Uppsala, Sweden)
- Conservation of Natural Resources (at the University of Illinois)

CURRICULUM AND PROGRAM DEVELOPMENT

2018. Co-leader in development of joint MA and MBA with Questrom School of Business.
2017. Led revision of professional MA program in Energy and Environment in Department of Earth and Environment.
2016. Initiated and led the development of proposed major/specialization in Sustainable Energy in Department of Earth and Environment.
2010. Led development of University-wide minor in Sustainable Energy, Boston University
2014. Developed new class, GE 560 *Energy Transitions*
2009. Revision of GE 309, *Intermediate Environmental Analysis*.
2007. Revision of curriculum in discussion sections for GE 100, *Intro. to Env. Science* (with R. Kaufmann)
2002. Revision of BA degrees in Environmental Science and Environmental Analysis and Policy.
1999. Revision of GG 312/612, *Global Change* (with C. Woodcock, and R. Myneni)
1996. Co-development (with C. Woodcock) of a new BA/MA degrees in Energy and Environmental Analysis and Environmental Remote Sensing and Geographic Information Systems
1995. Development of minor concentrations in Environmental Science and Environmental Analysis and Policy
1995. Participated in the development of administrative and curriculum structure for study abroad program in Ecuador
1995. Completely revised EE 520, *Topics in Energy and Environmental Policy*.
1994. Developed administrative and curriculum structure for Boston University's affiliation with the School for Field Studies
1994. Revision of the degree requirements for the Bachelor of Arts degrees in Environmental Analysis and Policy and Environmental Science
1994. Co-development (with C. Woodcock) of a new Master of Arts degree in Environmental Remote Sensing and Geographic Information Systems
1994. Revision of the degree requirements for the Master of Arts degree in Energy and Environmental Analysis
1993. Development of Honor's section for GG 100, *Introduction to Environmental Science*.
1993. Collaboration with Washington Internship Program to develop course in environmental policy
1991. Designed and developed a new course (GG 550), *Modeling Environmental and Social Systems* (with Prof. Kaufmann). This course is a required course in the Undergraduate Concentration in Environmental Analysis and Policy
- 1990-1991. Completely revised GG 518, *Natural Resource Scarcity and Economic Growth*.
- 1989-91. Initiated and led the development, submission, and approval of new BA concentrations in Environmental Science and Environmental Analysis and Policy
- 1989-90. Member of the Graduate Curriculum Committee in the Department of Geography that restructured the Graduate program in that Department
1988. Designed and developed a new course (GG 100), *Introduction to Environmental Science*. This course is a required course in the Undergraduate Concentrations in Environmental Analysis and Policy and Environmental Science
1987. Completely revised GG 304, *Alternative Energy and Environmental Futures*.
1987. Completely revised GG 510, *Physical Principles of the Environment*