

CLINTON J. ANDREWS

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Education

Massachusetts Institute of Technology, Cambridge, Massachusetts
Ph.D. in Urban & Regional Planning, 1990.
Dissertation: *Scenario-based Multi-attribute Tradeoff Analysis for Regional Electric Power Planning*, July 1990. Supervisor: Lyna Wiggins.

S.M., Technology and Policy/Mechanical Engineering, 1985.
Thesis: *Allocating Energy Costs Among the Users of Large Facilities*. Supervisor: Thomas Bligh.

Brown University, Providence, Rhode Island
Sc.B. with Honors, Urban Technology/Mechanical Engineering, 1978.
Thesis: *The Freedom Solar Water Heater*. Supervisor: Richard Dobbins.

Experience

Rutgers University, *Edward J. Bloustein School of Planning and Public Policy*, New Brunswick, New Jersey, 1997–present.
Professor 2009–present, Associate Professor 2002–2009, Assistant Professor, 1997–2002.
Interim Associate Dean of the Faculty 2017-present, Associate Dean for Planning and New Initiatives 2012–2017, Director of the Urban Planning program 2003–2009; Director of the Ph.D. program 2002; Director of the Rutgers Center for Green Building 2006-present; Member of the Rutgers Energy Institute; Member of the Environmental and Occupational Health Sciences Institute; and faculty affiliate of the Center for Energy, Environmental, and Economic Policy. Courses taught: quantitative methods, research strategies, environmental planning and management, industrial ecology, green building, energy policy, technology policy, studios.

TU Delft, *Technology Policy & Management faculty, Energy & Industry Section*, Delft, Netherlands, Spring 2010, visiting fellow while on sabbatical leave, performed research on agent-based modeling of occupants interacting with building systems.

Nanjing University, *School of the Environment*, Nanjing, China, Fall 2009, visiting fellow while on sabbatical leave, performed research on best practices in green building in China.

University of Sussex, *Science Policy Research Unit*, Brighton, UK, 2002-3, visiting fellow while on sabbatical leave, performed research linking environmental

management and organizational behavior.

Princeton University, *Woodrow Wilson School of Public and International Affairs*, Princeton, New Jersey, 1991–7. Co-director of the Science, Technology & Public Policy Program, and assistant professor. Affiliated with the Center for Energy and Environmental Studies, and the Center of Domestic Policy. Courses taught: quantitative methods, environmental planning, science & technology policy.

Massachusetts Institute of Technology, *Energy Laboratory*, Cambridge, Massachusetts, 1987–1991. Postdoctoral research associate (1990–1), Research assistant (1987–90), co-founded the Analysis Group for Regional Electricity Alternatives.

Non-academic experience: Consultant on energy planning & policy, environmental management, decision analysis, and public policy topics to World Bank, UNDP, TVA, Hydro Quebec, USDOE, USAID, others, 1991–present. Meridian Corporation, Alexandria VA; 1985–7, project manager for contract research on energy; Xenergy, Inc., Burlington MA; 1984, consulting engineer on energy management; Marion Cerbatos & Tomasi Engineers, San Francisco CA; 1979–83, mechanical engineer; REDE Corporation, Providence RI; 1978–9, designer.

Professional Credentials

American Institute of Certified Planners, member, 2006.

LEED v.2. Certified Professional, U.S. Green Building Council, 2004.

Professional Engineer (mechanical) licensed in California (1982) and Massachusetts.

Selected Honors

Fellow, American Association for the Advancement of Science, elected 2016.

Academic Leadership Program Fellow, Big Ten Academic Alliance, 2016-2017.

IEEE Distinguished Lecturer on Social Implications of Technology, 2013-16, 2006.

New Jersey Historic Preservation Award, Bell Laboratories Holmdel Charrette 2009

IEEE Brian O’Connell Distinguished Service Award, Social Implications of Technology 2009

Rutgers Academic Excellence Fund Award, Innovation Studies Initiative 2007-9

IEEE 3rd Millennium Medal–Social Implications of Technology, 2000.

NSF/Lucent Technologies Industrial Ecology Fellow 1998-2000.

AT&T Industrial Ecology Faculty Fellow 1993–5.

Sigma Xi, elected 1985.

Selected Service and Professional Activities

Planning Accreditation Board, site visitor. (UC Berkeley 2016).

Association of Collegiate Schools of Planning, Board of Directors, 2008–16;
Treasurer 2012-16, Northeast representative 2008-2011.

International Society for Industrial Ecology. Board of Directors, 2011-2012; secretary 2011-12; member 2003-5; chair of awards committee 2004-5; founding editor of newsletter, 2001-3.

Institute of Electrical and Electronics Engineers (IEEE).

- Facilitator, Experts in Technology and Policy Forums on Internet Privacy, Security & Governance, 2014-2016.
- Future Directions Committee, 2014-16.
- Chair, Ethics and Member Conduct Committee, 2012-13; member 2010-present.
- President's Sustainability Initiative, 2009.
- Nominations & Appointments Committee, 2007-8.
- Discourses on Technology & Society, special initiative leader, 2006-7; co-organizer for hydrogen economy, wind power symposia, 2005-6.
- Board of Directors (Division VI Delegate) 2005-2006, with many associated committee duties.
- Society on the Social Implications of Technology, conference co-organizer, 2008-9; conference committee chair, 1997-2007; Past President, 2004-5; President, 2002-3; Vice President, 2001; Treasurer, 1998-2000; Board of Governors, 1997 - present; conference organizer, 1996.
- IEEE-USA Energy Policy Committee, corresponding member, 2005-present; member, 1997-2004; Technology Policy Symposium organizing committee, 1997, 1999.

International Energy Agency, Annex 66 Expert Working Group on standardizing representation of occupant behavior in building energy performance models, co-leading applications subtask 2014-2017.

Gordon Research Conferences: Industrial Ecology, chair of nominating committee for 2010-12 leadership, 2008; presenter, 2016; discussion leader, 1998, 2006; participant, 2000, 2002, 2004. Science & Technology Policy, presenter, 2006.

NOAA Sea Grant-North Atlantic Regional Team project "Supporting cost-efficient adaptation planning in the North Atlantic," Steering Committee. 2012.

New Jersey Department of Environmental Protection. Member, Science Advisory Board, 2010-2019.

International Advisory and Evaluation Panel of the Institute for Climate and Global Change Research of Nanjing University, Nanjing, China, 2009-2015.

Sustainable Jersey, Board of Trustees, 2011-2016. New Jersey Sustainable State Institute. Founding co-chair, Board of Governors, 2001-2008.

New Jersey Higher Education Partnership for Sustainability. Vice President, 2003-2009.

Borough of Highland Park, NJ. Capital Improvements Planning Task Force, chair, 2014-15; Redevelopment Agency, commissioner 2006-present, secretary 2011-12, vice president 2007-2010, 2013-2014; Green Community Working Group, chair, 2004-8.

Trenton Materials Exchange, Trenton, New Jersey. Board of Directors member, 2000-4.

Rutgers University Sustainability Committee, chair 2006–7, member 2005–present.

Advisory board service for the New Jersey Board of Public Utilities, 2008; New Jersey Department of Transportation, 2008; NJ Institute of Technology, 1995–2000; US Environmental Protection Agency, 1999; NJ Future, 1997–9; Electric Power Research Institute, 1996–9; Tennessee Valley Authority, 1992–5; Intergovernmental Panel on Climate Change, 1994; US Dept of Energy, 1993; others.

Other memberships: American Planning Association, American Society of Heating Refrigeration & Air-conditioning Engineers, American Association for the Advancement of Science, Environmental Design Research Association, International Association for Energy Economics, Society for Risk Analysis.

Editorships: Co-editor, *Journal of Planning Education and Research*, 2016-2020; Associate Editor, *Sustainable Cities and Society*, 2015.

Editorial Boards: *Journal of the American Planning Association*, 2008–13; *Journal of Industrial Ecology*, 2005–2016; *Local Environment* (Taylor & Francis), 1999–2007; *Wiley Encyclopedia of Electrical and Electronics Engineering* (New York: John Wiley), 1995–7.

Manuscript Reviewer: *Cambridge University Press*, *Chemosphere*, *Energy Journal*, *Energy Policy*, *Environment and Planning B*, *Environmental Science & Technology*, *IEEE Technology and Society*, *IEEE Transactions on Power Systems*, *Island Press*, *Journal of the American Planning Association*, *Journal of Environmental Planning and Management*, *Journal of Industrial Ecology*, *Journal of Planning Education and Research*, *Local Environment*, *MIT Press*, *Oxford University Press*, *Policy Studies Journal*, *Proceedings of the IEEE*, *Proceedings of the National Academy of Science*, *Resources for the Future*, *Risk Analysis*, *Society and Natural Resources*, *UBC Press*, *World Politics*, and others.

Proposal Reviewer: National Science Foundation, Cyber-SEES review panel 2014 & 2015, IGERT review panel 2001, proposal evaluator 1997–present; U.S. Environmental Protection Agency, STAR review panel 2005, proposal evaluator 2003–present; U.S. Department of Energy, GCARP review panel 1995; European Union Research Directorate, 2004; Netherlands National Research Council, 2003; U.S. Department of Commerce, 1999; Hudson River Foundation, 2000; Robert Wood Johnson Foundation, 2001; and others.

Teaching

Graduate Courses

Energy Planning and Policy, Environmental Planning and Management, Green Buildings, Industrial Ecology, Methods of Planning Analysis II, Science Technology & Public Policy, Methods in Science Technology & Public Policy (risk analysis), Urban Planning Studios

Undergraduate Courses

Green Buildings, Research Seminar

Ph.D. Students Supervised

PhD Completed: Handi Chandra Putra (2017), Carla Coronado (2017), Jennifer Senick (2015), Elizabeth Hewitt (2015), Jesse Sherry (2014), Haiyan Zhang (2013), Margaret Brennan (2010), Hyunsoo Park (2010), Seong-Jai Kim (2010), Brian Schilling (2009), Mookhan Kim (2008), Ana Baptista (2008), John Posey (2008), David Hassenzahl (2000), Georgios Kassinis (1997)

Post-Quals Students: Handi Chandra Putra, Carla Coronado.

Pre-Quals Students: Ioanna Tsoulou, Diren Kocakuşak.

Externally Funded Research

2016-2021 National Science Foundation, \$3 million, co-PI with Robert Kopp III, Jie Gong, Rebecca Jordan, and Lisa Auermuller, “NRT: Coastal Climate Risk and Resilience.”

2016-2018 National Science Foundation, \$250k, PI, “EAGER: Predicting Electricity Demand and Indoor Air Quality During Heat Waves.”

2016-2017 New Jersey Sea Grant Consortium, \$139k, PI, “Communicating about flood risks to real estate market segments in coastal New Jersey.”

2016-2020 Association of Collegiate Schools of Planning, \$297k, PI, “*Journal of Planning Education and Research* Editorship.”

2014-2017 National Science Foundation, \$800k, co-PI with Enrique Curchitser, Joseph Seneca, Frank Felder & Robert Kopp, “EaSM-3: Regional Decadal Predictions of Coupled Climate-Human Systems.”

2013-2016 U.S. Department of Housing and Urban Development, \$687k, PI, “Cost-Effective Detection of Multi-Family Housing-Related Health and Safety Hazards.”

2011-2016 U.S. Department of Energy (via subgrant from Penn State University) \$2.7 million, PI, “Consortium for Building Energy Innovation.”

2013-2014 New Jersey Recovery Fund, \$100k, PI, “Regenerative Community Vision Planning.”

2011-2013 Public Service Electric & Gas Energy Technology Commercialization Program, \$500k, PI, “ENJOY Solar House.”

2010-2011 U.S. Department of Energy, \$100k (plus \$600k in cash and in-kind private

- sector gifts), PI, “Team New Jersey Solar Decathlon 2011 entry.”
- 2010-2013 U.S. Department of Housing and Urban Development, \$650k, PI, “Expanding the definition of Green: Impacts of Green and Active Living Design on Health in Low Income Housing.”
- 2010-2011 N.J. Association of Realtors, \$18.5k, “Cost-effectiveness of Residential Energy Efficiency Investments.”
- 2009-2013 N.J. Board of Public Utilities (via subcontract from MaGrann Associates) \$75k, PI, “NJ Climate Choice Homes Evaluation.”
- 2009-10 U.S. Environmental Protection Agency, \$25k, PI, “Green Remodeling.”
- 2008-2011, U.S. Green Building Council, \$150k, PI, “Investigating Opportunities for Improving Building Performance through Simulation of Occupant and Operator Behavior.”
- 2008–10, New Jersey Department of Environmental Protection, \$250k, PI, “New Jersey Green Building Guidelines.”
- 2008, Regional Plan Association, \$45k, PI, “Trenton Green.”
- 2008, Maplewood Township, NJ, \$10k, PI, “Comparative Analysis of Playing Field Turf Alternatives.”
- 2007–13, National Science Foundation, \$1.8 million, Co-PI with Uta Krogmann, “BE-MUSES: Self-Sufficient Urban Buildings.”
- 2007–8, New Jersey Meadowlands Commission, \$120k, PI, “Life Cycle Costs and Life Cycle Assessment for Green Buildings.”
- 2007–8, New Jersey Department of Environmental Protection, \$20k, PI, “New Jersey Green Home Remodeling Guidelines.”
- 2007–8, Hillsborough Township, \$10k, PI, “Living Green: Ordinances.”
- 2007–8, Geraldine R. Dodge Foundation, \$40k, PI, “Community Sustainability Project.”
- 2007–8, New Jersey Department of Community Affairs, \$50k, PI, “Leadership and Guidance for Sustainable Communities.”
- 2007–8, Middlesex County, NJ, \$75k, PI, “Sustainable Middlesex County.”
- 2007–8, Princeton Township, NJ, \$20k, PI, Princeton Sustainability Project.”
- 2007–8, Sustainable Lawrence, \$5k, PI, “Lawrence Sustainability Project.”

2007, 2010 Liberty Property Trust, \$100k, PI, gift for green building research.

2007, International Institute for Sustainable Development, \$2.7k, PI, “Sustainability Metrics.”

2006–8, Hillsborough Township, NJ, \$20k, PI, “Hillsborough Community Sustainability Project.”

2006–7, West Windsor Township, NJ, \$20k, PI, “West Windsor Community Sustainability Project.”

2005–7, New Jersey Board of Public Utilities, \$237k, PI, “Energy Targets for New Jersey.”

2004–6, National Science Foundation, \$114k, Co-PI with Uta Krogmann, “BE MUSES: Towards Self-Sustaining High-Rise Buildings: Framework for an Analysis of Materials, Energy, Economic and Social Issues.”

2002–6, U.S. Environmental Protection Agency, \$325k, PI, STAR Corporate Environmental Performance grant “Agent-Based Modeling of Industrial Ecosystems.”

2002–5, State of New Jersey, \$180k, PI, “New Jersey Sustainable State Institute” in collaboration with New Jersey Institute of Technology (\$250k total).

2000–6, AT&T, Inc., \$40k, PI, “Industrial Ecology Research.”

1998–2002, New Jersey Department of Environmental Protection, \$158k, PI, “New Jersey Comparative Risk Project.”

1998–2001, National Science Foundation/Lucent Technologies Foundation, \$100k, PI, “LT: Methods Development for Place-Based Industrial Ecology.”

1998–9, New Jersey Policy Research Foundation, \$11k, “Complementarity of Public and Private Land Preservation Efforts.”

1997–8, National Science Foundation, \$38k, Co-PI with Robert H. Socolow, “Closing Loops: A Workshop on Scale Issues in Implementing Industrial Ecology.”

1993–5, Tennessee Valley Authority, \$77k, PI, “Integrated Resource Planning Research.”

1992–4, U.S. Environmental Protection Agency, \$100k, co-PI with Robert Socolow, “Accounting for Heavy Metals in Sewage Sludge.”

Internally-Funded Research

2015-2017, New Brunswick Chancellor's Strategic Initiative, \$200k, "Rutgers Living Lab."

2007, Rutgers Academic Excellence Fund, \$50k, co-PI with Carl Pray, Innovation Studies Initiative.

1992-7, Princeton University competitive small grants totaling \$28k, PI.

Publications

Books

Authored Books

Clinton J. Andrews, *Humble Analysis: The Practice of Joint Fact Finding*. Westport CT: Praeger, 2002, 200 pp.

Edited Books

Clinton J. Andrews, editor, *Regulating Regional Power Systems*. Westport CT: Quorum Books (paperback edition also released by IEEE Press, New York), 1995, 405 pp.

Robert H. Socolow, Clinton J. Andrews, Frans Berkhout and Valerie M. Thomas, editors, *Industrial Ecology and Global Change*, Cambridge: Cambridge University Press, 1994, 500 pp.

Chapters in Books

Jennifer A. Senick, Clinton J. Andrews, Handi Chandra Putra, Ioanna Tsoulou, MaryAnn Sorensen Allacci. Synthetic Populations of Building Office Occupants and Behaviors, chapter in *Building Performance Evaluation*, Springer International, Wolfgang Preiser, Andrea E. Hardy, and Ulrich Schramm, eds., 2018. DOI 10.1007/978-3-319-56862-1_5.

Clinton J. Andrews. "Communicative Science," chapter 5 in *Joint Fact Finding in Urban Planning and Environmental Disputes*. London, UK: Routledge, Masahiro Matsuura and Todd Schenk, eds., 2016.

Clinton J. Andrews. "Local Fiscal Impacts of Superstorm Sandy" in *Taking Chances on the Coast after Hurricane Sandy*, Karen O'Neill and Daniel Van Abs, eds., Rutgers University Press, 2016.

Hyunsoo Park and Clinton J. Andrews, "City Planning and Energy Use," entry in Cleveland, C., ed., *Encyclopedia of Energy*, San Diego, CA: Elsevier, 2014 (2004).

Clinton J. Andrews, "Planning," chapter 64 (pp. 1005-1008) in Edward N. Ziegler, ed., *Encyclopedia of Environmental Science and Engineering*, 6th ed., Boca

- raton: CRC Press, 2012.
- Clinton J. Andrews and Robert H. Friis, “Green living: Reducing the individual’s carbon footprint,” chapter 23 (pp. 455-473 in Robert H. Friis, ed., *The Praeger Handbook of Environmental Health*, Santa Barbara: Praeger, 2012.
- Clinton J. Andrews, Jennifer A. Senick, Richard E. Wener, “Incorporating occupant perceptions and behavior into BIM,” chapter 20 (pp. 234-46) in Shauna Mallory-Hill, Wolfgang F.E. Preiser & Chris Watson, eds., *Enhancing Building Performance*, Oxford: Blackwell, 2012.
- Clinton J. Andrews, Lisa Dewey-Mattia, Judd Schechtman, and Mathias Mayr, “Alternative energy sources and land use,” in G. Ingram & H. Hong, eds., *Climate Change, Energy Use, and Land Policies*, Cambridge, MA: Lincoln Institute of Land Policy, 2011.
- Frank Felder, Clinton J. Andrews, and Seth Hulkower, “Which energy future? Scenarios for the global energy sector,” in F. Sioshansi, ed., *What energy future? Sustainable lifestyle on a finite planet*, Dordrecht: Elsevier, 2011.
- Clinton J. Andrews, “Changing a firm’s environmental performance from within,” Ch. 7 in M. Ruth & B. Davidsdottir, eds., *Changing Stocks, Flows, and Behaviors in Industrial Ecosystems*, Aldershot, UK: Edward Elgar, 2008, pp. 82–100.
- Clinton J. Andrews, “Rationality in policy decision making,” Ch. 12 in F. Fischer, G.J. Miller & M.S. Sidney, eds., *Handbook of Public Policy Analysis*, NY: CRC Press, 2007, pp. 161–71.
- Clinton J. Andrews, “Sustainable Energy in New Jersey,” Ch. 6 in D. Rahm, ed., *Sustainable Energy and the States*, Jefferson, NC: McFarland, 2006, pp. 108–26.
- Clinton J. Andrews, Ana Baptista and Shawn Patton, “Grounded theory and multi-agent simulation for a small firm,” Ch. 16 in T. Terano, H. Kita, T. Kaneda, K. Arai, and H. Deguchi, eds., *Agent-Based Simulation: From Modeling Methodologies to Real-World Applications*, Tokyo: Springer-Verlag, 2005, pp. 167–81.
- Clinton J. Andrews and L. James Valverde, Jr., “Analysis in Support of Environmental Decision Making,” Ch. 21 in Linkov, I., and A.B. Ramadan, eds., *Comparative Risk Assessment and Environmental Decision Making*, Netherlands, Dordrecht: Kluwer Academic, 2004, pp. 327–34.
- Clinton J. Andrews, Defne S. Apul, and Igor Linkov, “Comparative Risk Assessment: Past Experience, Current Trends and Future Directions,” Ch. 1 in Linkov, I., and A.B. Ramadan, eds., *Comparative Risk Assessment and Environmental Decision Making*, Netherlands, Dordrecht: Kluwer Academic, 2004, pp. 3–14.
- Clinton J. Andrews, “Lessons from the New Jersey Comparative Risk Project,” Ch. 9

- in Linkov, I., and A.B. Ramadan, eds., *Comparative Risk Assessment and Environmental Decision Making*, Netherlands, Dordrecht: Kluwer Academic, 2004, pp. 133–48.
- Clinton J. Andrews, "Municipal Solid Waste," Ch. 44 in R.U. Ayres, ed., *Handbook of Industrial Ecology*, Aldershot, UK: Edward Elgar, 2002, pp. 542–53.
- Clinton J. Andrews, "Industrial Ecology and Spatial Planning," Ch. 38 in R.U. Ayres, ed., *Handbook of Industrial Ecology*, Aldershot, UK: Edward Elgar, 2002, pp. 476–87.
- Clinton J. Andrews, "Electricity Meets Federalism." Ch. 1 in C. Andrews, ed., *Regulating Regional Power Systems*, Westport CT: Quorum Books (paperback edition also released by IEEE Press, New York), 1995, pp. 3–25.
- Clinton J. Andrews, "Regional Diversity: Circumstance or Choice?." Ch. 27 in C. Andrews, ed., *Regulating Regional Power Systems*, Westport CT: Quorum Books (paperback edition also released by IEEE Press, New York), 1995, pp. 361–83.
- Clinton J. Andrews, "Policies to Encourage Clean Technology." Ch. 31 in R. Socolow, C. Andrews, F. Berkhout and V. Thomas, eds., *Industrial Ecology and Global Change*, Cambridge: Cambridge University Press, 1994, pp. 405–22.
- Clinton J. Andrews, Frans Berkhout, and Valerie M. Thomas, "The Industrial Ecology Agenda." Ch. 36 in R. Socolow, C. Andrews, F. Berkhout and V. Thomas, eds., *Industrial Ecology and Global Change*, Cambridge: Cambridge University Press, 1994, pp. 469–77.
- Stephen R. Connors and Clinton J. Andrews, "System wide Evaluation of Efficiency Improvements: Reducing Local, Regional and Global Environmental Impacts," in J. Tester et al, eds., *Energy and the Environment in the 21st Century*, Cambridge MA: MIT Press, 1991, pp. 775–88.

Journals and Proceedings

Special Journal Issues Edited

- Co-editor with Bong Dong, topical issue on applications of occupant behavior modeling, *Building Simulation* 10(6), 2017.
- Editor, special issue on social implications of sustainable systems and technology, *IEEE Technology and Society Magazine*, Fall 2010.
- Co-editor with Saifur Rahman, special issue on the hydrogen economy, *Proceedings of the IEEE* 94(10), October 2006.
- Editor, special issue on security and crime prevention, *IEEE Technology and Society Magazine*, 23(3), Fall 2004.

Co-editor with Kevin Passino, special issue on systems concepts and technology, *IEEE Technology and Society Magazine*, 19(4), Winter 2000/2001.

Editor, special issue on technical expertise and public decisions, *IEEE Technology and Society Magazine*, 16(1), Spring 1997.

Journal articles (refereed)

Handi Chandra Putra, Clinton J. Andrews, Jennifer A. Senick. An agent-based model of building occupant behavior during load shedding, *Building Simulation* (2017): 1-15, DOI: 10.1007/s12273-017-0384-x.

Clinton J. Andrews. The changing socioeconomic context of buildings, *Journal of Solar Energy Engineering* 139(1): 1-10, special issue on buildings of the future, doi: 10.1115/1.4034911.

Clinton Andrews, David Hattis, David Listokin, Jennifer Senick, Jennifer Souder, and Gabriel Sherman, Energy-efficient re-use of existing commercial buildings, *Journal of the American Planning Association* 82(2)(2016 special issue on historic preservation): 113-133. DOI:10.1080/01944363.2015.1134275

Clinton Andrews, MaryAnn Sorenson Allacci, Jennifer Senick, Handi Chandra Putra, and Ioanna Tsoulou, Using synthetic population data for prospective modeling of occupant behavior during design, *Energy and Buildings* (2016 special issue on occupant behavior modeling): 415-423. DOI: 10.1016/j.enbuild.2016.05.049

Zuocheng Wang, Leonardo Calderón, Allison Patton, MaryAnn Sorensen Allacci, Jennifer Senick, Richard Wener, Clinton Andrews, and Gediminas Mainelis. Comparison of Real-Time Instruments and Gravimetric Method When Measuring Particulate Matter in a Residential Building, *Journal of the Air & Waste Management Association* (2016). DOI:10.1080/10962247.2016.1201022

Allison P. Patton, Leonardo Calderon, Youyou Xiong, Zuocheng Wang, Jennifer Senick, MaryAnn Sorensen Allacci, Deborah Plotnik, Richard Wener, Clinton J. Andrews, Uta Krogmann, Gediminas Mainelis. Airborne Particulate Matter in Two Multi-family Green Buildings: Concentrations and Effect of Ventilation and Occupant Behavior. *International Journal of Environmental Research and Public Health* (2016, special issue on indoor air quality) 13(1): 144-164; doi:10.3390/ijerph13010144

Elizabeth Hewitt, Clinton Andrews, Uta Krogmann, Jennifer Senick, Richard Wener, and MaryAnn Soresen Allacci, Distinguishing between green building occupants' reasoned and unplanned behaviours, *Building Research and*

- Information* 44(2)(2015): 119-134. DOI: 10.1080/09613218.2015.1015854
- Youyou Xiong, Uta Krogmann, Gediminas Mainelis, Lisa Rodenberg, Clinton Andrews, Indoor air quality in green buildings: A case-study in a residential high-rise building in the northeastern US, *Journal of Environmental Science and Health, Part A*, 2015, 50(3): 225-242.
DOI:10.1080/10934529.2015.981101
- Handi Chandra Putra, Jing Chen, Clinton J. Andrews, "Eco-evolutionary pathways toward industrial cities," *Journal of Industrial Ecology*, special issue on complexity, March 2015, 19(2). DOI: 10.1111/jiec.12234.
- Handi Chandra Putra, Haiyan Zhang, Clinton J. Andrews, "Modeling real estate market responses to coastal flooding," *Journal of Artificial Societies and Social Simulation*, March 2015, 18(2).
- Martín Mosteiro-Romero, Uta Krogmann, Holger Wallbaum, York Ostermeyer, Jennifer S. Senick, Clinton J. Andrews, "Relative importance of electricity sources and construction practices in residential buildings: A Swiss-US comparison of energy related life-cycle impacts," *Energy and Buildings* 68(2014): 620-631.
- Lilli Linkola, Clinton J. Andrews, Thorsten Schütze, "An Agent Based Model of Household Water Use," *Water* 2013, 5(3), 1082-1100.
- Clinton Andrews, Daniel Yi, Uta Krogmann, Jennifer Senick and Richard Wener, "Designing buildings for real occupants: An agent-based approach," *IEEE Transactions on Systems Man and Cybernetics A: Systems and Humans* 41(6) (November 2011): 1077-1091.
- Clinton Andrews and David DeVault, "Green Niche Market Development: A Model with Heterogeneous Agents," *Journal of Industrial Ecology* April 2009, 13(2): 326-345, special issue on complexity.
- Clinton Andrews and Uta Krogmann, "Explaining the adoption of energy-efficient technologies in U.S. commercial buildings," *Energy and Buildings* 41 (2009): 287-294.
- Clinton Andrews and Uta Krogmann, "Technology diffusion and energy intensity in U.S. commercial buildings," *Energy Policy* 37(2009): 541-553.
- Clinton J. Andrews, "Greenhouse gas emissions along the rural to urban gradient," *Journal of Environmental Planning and Management*, November 2008, 51(6): 847-870. DOI: 10.1080/09640560802423780.
- Clinton J. Andrews, Henry C. Jonas, Nancy Mantell & Randall S. Solomon, "Deliberating on statewide energy targets," *Journal of Planning Education and Research*, Summer 2008, 28(1): 6-20.

- Clinton J. Andrews, "Energy conversion goes local: Implications for planners," *Journal of the American Planning Association*, Spring 2008, 74(2):231–54.
- Uta Krogmann, Clinton J. Andrews, Mookhan Kim, Gregory Kiss, and Clare Mifflin, "Water mass balances for the Solaire and the 2020 Tower: Implications for closing the water loop in high-rise buildings," *Journal of the American Water Resources Association*, December 2007, 43(6): 1414–23.
- Clinton J. Andrews, "Formulating and implementing public policy for new energy carriers," *Proceedings of the IEEE*, October 2006, 94(10): 1852–63.
- Clinton J. Andrews, "National responses to energy vulnerability," *IEEE Technology and Society Magazine*, Fall 2006, 25 (3): 16–25.
- Clinton J. Andrews, "Energy security as a rationale for governmental intervention," *IEEE Technology and Society Magazine*, Summer 2005, 24 (2): 10–25.
- Clinton J. Andrews, David M. Hassenzahl, and Branden B. Johnson, "Accommodating uncertainty in comparative risk," *Risk Analysis*, October 2004, 24 (5): 1321–33.
- Clinton J. Andrews, "Local industrial ecological analysis: Overcoming the open system problem." *Journal of Environmental Planning and Management*, July 2001, 44(4): 491–508.
- Clinton J. Andrews, "Building a micro foundation for industrial ecology," *Journal of Industrial Ecology*, May 2001, 4(3): 35–51.
- Clinton J. Andrews and Jamie Maurer, "Materials exchanges: An exploratory U.S. survey," *Local Environment*, May 2001, 6(2): 149–68.
- Clinton J. Andrews and Mathew Swain, "Institutional impacts affecting life-cycle impacts of computers," *Resources, Conservation and Recycling*, March 2001, 31(2): 171–88.
- Clinton J. Andrews, "Analyzing quality-of-place," *Environment and Planning B*, March 2001, 28(2): 201–17.
- Clinton J. Andrews, "Restoring legitimacy to the systems approach," *IEEE Technology and Society Magazine*, Winter 2000/2001, 19(4): 38–44.
- Clinton J. Andrews, "Diffusion pathways for electricity deregulation," *Publius*, Summer 2000, 30(3): 17–34.
- Clinton J. Andrews, "Putting industrial ecology into place: Evolving roles for planners," *Journal of the American Planning Association*, Autumn 1999, 65(4): 364–75.

- Clinton J. Andrews, "Environmental business strategy: Corporate leaders' perceptions," *Society and Natural Resources*, July/August 1998, 11 (5): 531–40.
- Clinton J. Andrews, "Public policy and the geography of U.S. environmentalism," *Social Science Quarterly*, March 1998, 79 (1): 55–73.
- Clinton J. Andrews and Shivani Govil, "Becoming proactive about environmental risks," *Energy Policy*, October 1995, 23 (10): 885–92.
- Clinton J. Andrews, "Evaluating risk management strategies in resource planning," *IEEE Transactions on Power Systems*, February 1995, 10 (1): 420–26.
- Clinton J. Andrews, "Asynchronous regional development," *Chemosphere*, September 1994, 29 (5): 1079–86.
- Clinton J. Andrews, "Electricity and federalism: understanding regional diversity," *Energy Policy*, July 1994, 22 (7): 629–38.
- Clinton J. Andrews, "Regional differences in emissions reduction opportunities: policy implications," *Energy Policy*, October 1993, 21 (10): 1011–24.
- Clinton J. Andrews and Stephen R. Connors, "Existing capacity – The key to reducing emissions," *Energy Systems and Policy*, 1992, 15: 211–35.
- Clinton J. Andrews, "An end use approach to reliability investment analysis," *Energy Economics*, October 1992, (4): 248–54.
- Clinton J. Andrews, "The marginality of regulating marginal investments," *Energy Policy*, May 1992, 20 (5): 450–63.
- Clinton J. Andrews, "Sorting out a consensus: Analysis in support of multi-party decisions," *Environment and Planning B: Planning and Design*, Spring 1992, 19 (2): 189–204.
- Clinton J. Andrews, "Spurring inventiveness by analyzing tradeoffs: A public look at New England's electricity alternatives," *Environmental Impact Assessment Review*, special Sustainability issue, 1992, 12 (1): 209–34.
- Clinton J. Andrews, "Designing strategically for the possibility of a future without R 22 and 134a," *ASHRAE Transactions*, #AT-90-25-4, American Society of Heating, Refrigeration, and Air-conditioning Engineers (ASHRAE), February 1990, 9 pp.
- Clinton J. Andrews, "The electric utilities are shifting risk to their customers: A new reason to invest in conservation," *ASHRAE Transactions*, #3332, ASHRAE, February 1990, 10 pp.

Clinton J. Andrews, "Anticipating air conditioning's impact on the world's electricity producers," *Energy Journal*, 1989, 10(3): 107–20.

Richard D. Tabors, Stephen R. Connors, Carl S. Bespolka, David C. White, and Clinton J. Andrews, "A framework for integrated resource planning: The role of natural gas fired generation in New England," *IEEE Transactions on Power Systems*, 1989, 4(3): 1010–16.

Published conference proceedings (peer reviewed)

Clinton J. Andrews, "How a changing socioeconomic context affects the demand for high-performance buildings," *Proceedings of the World Sustainable Built Environment Conference Transforming Our Built Environment through Innovation and Integration: Putting Ideas into Action*, Hong Kong, 7 June 2017. Construction Industry Council, Hong Kong Green Building Council, pp. 1561-1564. ISBN 978-988-77943-0-1.

Clinton J. Andrews, Elizabeth Hewitt, Agela Oberg & Carla Coronado, "Reimagining electric power to enhance urban resilience," *Proceedings of the Resilient Cities Symposium*, National Academies of Science, Beckman Center, Irvine, CA, 2014.

Clinton J. Andrews, "Regional energy technology options," *States and Climate Change: Leaders or Lab Rats?*, Proceedings volume published by the Policy Research Institute for the Region, Princeton University, Princeton, NJ, 2008, pp. 15–25.

Clinton J. Andrews, "From professional ethics to technological citizenship," *Proceedings of the International Symposium on Electronics and the Environment*, Piscataway, NJ: IEEE, 2006, pp. 45–7.

Clinton J. Andrews, "Reducing energy vulnerability," *Proceedings of the 2005 International Symposium on Technology and Society*, Piscataway, NJ: IEEE, 2005, 8 pp.

Clinton J. Andrews, "Bridging the descriptive-prescriptive divide in industrial ecology," *The Challenges of Industrial Ecology in the Barents Region*, part of the Technology, Society, Environment Series, Helsinki University of Technology, Espoo, Finland, 2003, pp. 13–18.

Clinton J. Andrews, "Avoiding deterministic thinking," *Proceedings of the 2003 International Symposium on Technology and Society*, Piscataway, NJ: IEEE, 2003, 2 pp.

Clinton J. Andrews, "Credibly constructing risk comparisons," *Proceedings of the 2002 International Symposium on Technology and Society*, Piscataway, NJ: IEEE, 2002, pp. 113–16.

- Clinton J. Andrews, "The roles of stakeholder- and peer-review at the OTA," *Proceedings of the 1997 International Symposium on Technology and Society*, Piscataway, NJ: IEEE, 1997, pp. 157–64.
- Clinton J. Andrews, "Norms of communicative analysis," also editor, *Proceedings of the 1996 International Symposium on Technology and Society*, Piscataway, NJ: IEEE, 1996, pp. 468–75.
- Clinton J. Andrews, "Roles for Regions: Comparing Russian and U.S. Electricity Reforms," *18th Annual International Conference of the International Association for Energy Economics*, Washington, DC, 1995, 54 pp.
- James Easterly, M. Nurnham, Janine Finnell, and Clinton J. Andrews, "Capturing environmental and economic externalities: evaluating the total fuel-cycle impacts of biomass." *Proceedings of the 6th Annual Bioenergy Conference*, 1994, 8 pp.
- Clinton J. Andrews, "Integrated Resource Planning: What's Being Integrated?," *Proceedings of the National Seminar on Public Utility Commission Implementation of the Energy Policy Act of 1992*, National Regulatory Research Institute, Columbus OH, 1993, 6 pp.
- Clinton J. Andrews, "Electric Competition and Engineering Imperatives," *Proceedings of the 14th Annual North American Conference of the International Association for Energy Economics*, New Orleans LA, 1992, 12 pp.
- Clinton J. Andrews, "Assessing Technology in Context," *New Technologies – Opportunities and Risks for the Environment*, UNEP-IEO/UNSCTD Expert Workshop, Paris, France, 1992, 10 pp.
- Clinton J. Andrews, "Building Consensus on a Shoestring: The Efficacy of Packaged Models in Joint Factfinding," *Proceedings of the 2nd International Conference on Computers in Urban Planning and Urban Management*, Oxford UK, 1991, pp. 371–86.
- Stephen R. Connors and Clinton J. Andrews, "The Role of Demand-Side Management in Strategic Emissions Reduction: Integrating End-Use Efficiency Improvements in the Electric Power Sector," *Proceedings of the DSM and the Global Environment Conference*, Arlington VA, 1991, pp. 293–304.
- Clinton J. Andrews, "Taking a Public - and Data Intensive - Look at New England's Electric Power Planning Alternatives," *Proceedings of the EPRI Information Technology for the Power Industry Conference*, sponsored by the Electric Power Research Institute, Washington DC, 1990, 14 pp.
- Clinton J. Andrews and Joan Olson, "Allocating energy costs among the users of large facilities;" *Proceedings of the 8th Annual World Energy Congress*; Association of Energy Engineers, Atlanta GA, October 1985, pp. 223–9.

Popular Articles, Opinion, Columns

- Clinton J. Andrews, "Policy Perspectives: Empowering sustainable consumption," *IEEE Technology and Society Magazine*, Fall 2013, 32(3): 8–9.
- Clinton J. Andrews, "'Does the Fukushima accident significantly change the nuclear footprint?'" *Electricity Journal* 24(6)(July 2011): 36-39.
- Clinton J. Andrews, "Policy Perspectives: What I learned from the recession," *IEEE Technology and Society Magazine*, Spring 2011, 30(2): 6–7.
- Clinton J. Andrews, "Policy Perspectives: Innovation as an energy policy for the world," *IEEE Technology and Society Magazine*, Summer 2009, 28(2): 5–6.
- Clinton J. Andrews, Skip Jonas, and Randall Solomon, "Living with Technology: New Jersey Acts on Energy and Climate Change," *IEEE Technology and Society Magazine*, Fall 2007, 26(3): 6–7.
- Jennifer A. Senick, Anthony Sblendorio and Clinton J. Andrews, "Toward regenerative design: The sustainable development of brownfields," *Brownfield News*, August 2007, 11(4): 12–3.
- Clinton J. Andrews, "Policy Perspectives: While the window is open on global warming..." *IEEE Technology and Society Magazine*, Summer 2007, 26(2): 5–6.
- Clinton J. Andrews and Peter Wiesner, "Engaged engineering," *Proceedings of the IEEE*, January 2007, 94(1): 3–4.
- Saifur Rahman and Clinton J. Andrews, "Scanning the issue: The hydrogen economy," *Proceedings of the IEEE*, October 2006, 94(10): 1781–4.
- Clinton J. Andrews, "Policy Perspectives: Practicing technological citizenship," *IEEE Technology and Society Magazine*, Spring 2006, 25(1):6–7.
- Clinton J. Andrews, "Policy Perspectives: Time for a reality check," *IEEE Technology and Society Magazine*, Spring 2005, 24 (1): 5–6.
- Clinton J. Andrews and Scott A. Weiner, "Visions of a hydrogen future: Strategic issues affecting the emergence of a hydrogen economy," *IEEE Power and Energy Magazine*, 2004, 2(2): 26–34.
- Clinton J. Andrews, "Social implications of security and crime prevention," Guest editorial, *IEEE Technology and Society Magazine*, Fall 2004, 23 (3): 6.
- Clinton J. Andrews, "Security and the built environment: An interview with John Habraken," *IEEE Technology and Society Magazine*, Fall 2004, 23 (3): 7–12.
Also published in Portuguese translation in *Urbanismo*, Spring 2005, 20: 20-5.

- Clinton J. Andrews, "President's Message: Is the world better than it was two years ago?" *IEEE Technology and Society Magazine*, Winter 2003/4, 22 (4): 3.
- Clinton J. Andrews, "President's Message: What should we become?" *IEEE Technology and Society Magazine*, Summer 2003, 22 (2): 4-5.
- Robert Axtell, Clinton J. Andrews, and Mitchell Small, "Agent-based modeling and industrial ecology," *Journal of Industrial Ecology*, Summer 2002, 5(4): 10-14.
- Clinton J. Andrews, "President's Message: Hi. Want to Participate?" *IEEE Technology and Society Magazine*, Spring 2002, 21 (1): 3.
- Clinton J. Andrews and Kevin M. Passino, "Social implications of systems concepts," Guest editorial, *IEEE Technology and Society Magazine*, Winter 2000/2001, 19 (4): 9.
- Clinton J. Andrews, "Breathtaking clarity, delicious ambiguity." Guest editorial, *Local Environment*, August 2000, 5(3):253-4.
- Clinton J. Andrews, "Policy Perspectives: An Engineer, Accountant, and EHS Manager Went Out in a Boat...", *IEEE Technology and Society Magazine*, Fall 1999, 18 (3): 4-7, 11.
- Clinton J. Andrews, "Policy Perspectives: Giving Expert Advice," *IEEE Technology and Society Magazine*, Summer 1998, 17 (2): 5-6.
- Clinton J. Andrews, "Technical Expertise and Public Decisions," *IEEE Technology and Society Magazine*, Spring 1997, 16 (1): 2-3.
- Clinton J. Andrews, "Policy Perspectives: Not by Faith Alone," *IEEE Technology and Society Magazine*, Summer 1996, 15 (2): 8-9.
- Clinton J. Andrews, "Policy Perspectives: Shrinking Utilities," *IEEE Technology and Society Magazine*, Spring 1996, 15 (1): 2, 31.
- Clinton J. Andrews, "Policy Perspectives: Citizen Consumer," *IEEE Technology and Society Magazine*, Fall 1995, 14 (3): 6-7. Also published in Polish translation in *Transformacje 95-96* (9-10): 3-4.
- Clinton J. Andrews, "Policy Perspectives: Scaling Up," *IEEE Technology and Society Magazine*, Summer 1995, 14 (2): 4-5.
- David C. White, Clinton J. Andrews, and Nancy Stauffer, "Electricity Without Global Warming," *Technology Review*, January 1992, 95 (1): 42-50
- Clinton J. Andrews, "Bringing Solar to a Fragile Land: Ladakh, India;" *Solar Age*; Harrisville NH, November 1984.

Book Reviews

- Clinton J. Andrews, Book Review: "The Evolution of Great World Cities: Urban Wealth and Economic Growth (Christopher Kennedy), *Journal of Industrial Ecology*, December 2012, 16(6): 963-4.
- Clinton J. Andrews, Special Book Review Section on the Most Influential Books in Planning, "Urban Planning Analysis: Methods and Models (D. Krueckeberg & A. Silvers)" *Journal of the American Planning Association*, Spring 2009, 75(2): 259.
- Clinton J. Andrews, Book Reviews, "The Environmental Case: Translating Values into Policy (J. Layzer) and Environmental Choices: Policy Responses to Green Demands (L. Rothenberg)" *Journal of the American Planning Association*, Spring 2003, 69(2): 196-7.
- Clinton J. Andrews, Book Reviews, "Inspired by Rubbish: Fat of the Land: Garbage in New York the Last Two Hundred Years (B. Miller); The Politics of Garbage: A Community Perspective on Solid Waste Policy Making (L. Luton); The Waste Crisis: Landfills, Incinerators, and the Search for a Sustainable Future (H. Tammemagi); Waste and Want: A Social History of Trash (S. Strasser); and Why Do We Recycle? Markets, Values, and Public Policy (F. Ackerman)," *Journal of Industrial Ecology*, January 2002, 6(1): 123-5.
- Clinton J. Andrews, Book Review, "Better Environmental Decisions (K. Sexton et al)," *Journal of the American Planning Association*, Autumn 2000, 66(4): 453-4.
- Clinton J. Andrews, Book Reviews, "Why Energy Conservation Fails (H. Inhaber); Chemicals, Cancer, and Choices (P. VanDoren); and Common Sense and Common Law for the Environment (B. Yandle)," *Journal of Policy Analysis and Management*, Spring 2000, 19(2): 354-6.
- Clinton J. Andrews, Book Review, "In Nature's Company (C. Frankel)," *Society and Natural Resources*, June 1999, 12(5): 513-5.
- Clinton J. Andrews, Book Review, "Zero Pollution for Industry: Waste Minimization Through Industrial Complexes (N. Nemerow)," *Journal of Industrial Ecology*, Winter 1997, 1(1): 147.
- Clinton J. Andrews, Book Review, "Narrative Policy Analysis: Theory and Practice (E. Roe)," *Society and Natural Resources*, Nov-Dec 1996, 9(6): 658-60.
- Clinton J. Andrews, Book Review, "Power Surge (C. Flavin and N. Lenssen)," *American Scientist*, January-February 1996, 84(1): 92.

Electronic Publications (not peer reviewed)

- Clinton J. Andrews, "How will society interact with the Internet of Things?" *IoT Evolution World*, October 5, 2016.
<http://www.iotevolutionworld.com/iot/articles/425826-how-will-society->

interact-with-internet-things.htm.
Clinton J. Andrews, "A disastrous performance: IE and the eye of the storm," *ISIE News*, December 2005, 5(4): 1, 7.
<http://www.is4ie.org/publications/publications2.html>.

Founding editor of the *ISIE News*, a quarterly electronic newsletter of the International Society for Industrial Ecology, volumes 1–3 (2001–2003). Each issue is 8–12 pages long and it is emailed as a PDF file attachment to the 400 or so society members. Back issues are posted on the web at <<http://www.is4ie.org>>.

Keynote or Plenary Addresses

2017.09.28 "Characterizing Human Behavior across Scales from Building to City," (keynote) Smart Cities & Human Behavior forum, Central University of Finance and Economics, Beijing, China.

2016.11.10 "How do society and the Internet of Things interact?" William and Patricia Stacy Ethics Lecture & IEEE Distinguished Lecture on Social Implications of Technology, University of Kentucky, Lexington, KY.

2015.05.29 "How do green buildings and green cities interact?" (keynote) iCities Forum, National Cheng Kung University, Tainan, Taiwan.

2014.12.02 "Public roles for technical experts," IEEE Distinguished Lecture on Social Implications of Technology, CONET, Philadelphia, PA.

2014.11.20 "Whose innovations are helping? The disciplines address climate change," Sigma Xi / IEEE Distinguished Lecture on Social Implications of Technology, University of New Mexico, Albuquerque, NM.

2014.02.21 "Whose innovations are helping? The disciplines address climate change," IEEE Distinguished Lecture on Social Implications of Technology, Engineers Week, Allentown, PA.

2013.10.24 "Energy security in a "smart" world," IEEE Distinguished Lecture on Social Implications of Technology, Hartford, CT.

2013.6.30 "Building smarter and more resilient cities," International Association for China Planning Annual Conference, Shanghai, China.

2013.6.6 "What next for New Jersey's utilities?" New Jersey Utilities Association Annual Conference, Galloway, NJ.

2013.4.11 "Who controls smart stuff?," 5th Annual Brian O'Connell Memorial Lecture, Central Connecticut State University, New Britain, CT.

2011.05.24 "Does Fukushima Significantly Increase the Nuclear Footprint?" plenary, IEEE International Symposium on Technology & Society, Chicago, IL.

- 2009.11.16 "Roles for Green Buildings in Solving Global Warming," sponsored lecture, School of Energy and Environment, Southeast University, Nanjing, Jiangsu, China.
- 2009.11.08 "Environmental risk analysis: evolving methodological and procedural synergies," keynote, International Symposium on Environmental Monitoring & Risk Management, Nanjing, Jiangsu, China.
- 2009.10.21 "How can we make a graceful transition? The challenge of aligning energy and climate change policies," First Zhongshan Forum on Climate and Global Change, Nanjing University, Nanjing, Jiangsu, China.
- 2009.10.19 "U.S. Wetlands Policy," First International Forum on Sihong Hongze Lake Wetland National Park, Sihong, Jiangsu, China.
- October 13, 2008, "Joint fact-finding," plenary lecture, International Council for the Exploration of the Sea Meeting, Copenhagen, Denmark.
- October 8, 2008, "Whose Actions Matter? Lessons from Agent-Based Models in Industrial Ecology," Engineering Lecture Series, Lafayette College, Easton, PA.
- May 13, 2008, "Why your work is important," keynote, NJDOT New Jersey Smart Workplaces Program, Employer Recognition Event, Newark, NJ.
- May 1, 2008, "Whose innovations are helping? Comparing global warming solutions from chemists, biologists, electrical engineers, and others," keynote, American Chemical Society, Monmouth Section quarterly meeting, Eatontown, NJ.
- April 4, 2007, "Envisioning New Jersey's Energy Future: What Stakeholders Want," keynote, GLOBALCON, Atlantic City, NJ.
- October 12 & 13, 2006, "Pros and Cons of Hydrogen," IEEE Distinguished Lecture on Social Implications of Technology, University of British Columbia and BC Hydro Auditorium, Vancouver, BC.
- October 12, 2006, "Energy Security," IEEE Distinguished Lecture on Social Implications of Technology, BC Hydro Auditorium, Vancouver, BC.
- February 24, 2005, "Is it Worth Fighting for Energy Security?," Institute for Environmental Science and Policy Lecture, University of Illinois at Chicago.
- May 29, 2004, "Assessing Technology in a Global Context," keynote, IEEE Society on Social Implications of Technology Regional Meeting, Kyoto University, Kyoto, Japan.
- April 4, 2003, "Doing joint fact-finding," Dept. of City & Regional Planning Lecture, University of Illinois at Urbana-Champaign, IL.

February 7, 2003, "Agency in industrial ecosystems," School of Forestry and Environmental Studies Lecture, Yale University, New Haven, CT.

October 31, 2001, University Forum Lecture. "Assessing Livability." University of Nevada Las Vegas, NV.

October 1, 2001, Public Affairs Lecture Series. "Keeping the Lights On: U.S. Energy Policy." Fairleigh Dickinson University, Madison, NJ.

April 12, 2001, Institute for Environmental Studies Spring Lecture Series. "What We've Learned from Comparative Risk Projects." University of Pennsylvania, Philadelphia, PA.

January 28, 2001, "Dimensions of Livability." Keynote panelist, Workshop on Transportation Decision-making: Place, Community, and the Quality of Life, Committee on Identifying Data Needs for Place-based Decision Making, National Academy of Science, Beckman Center, Irvine, CA.

April 28, 1998, Bovay Lecture on the History and Ethics of Professional Engineering. "Choices in Industrial Ecology." Cornell University, Ithaca, NY.

February 27, 1998, Institute for Environmental Studies Spring Lecture Series. "The Geography of U.S. Environmentalism: Policy Implications." University of Pennsylvania, Philadelphia, PA.

October 22, 1996, Center for Energy and Environmental Studies Tuesday Speakers Series. "Technical Expertise and Public Decisions." Princeton University, Princeton, NJ.

December 5, 1995, IEEE Power Engineering Society Lecture Series on Deregulation. "Implications of Piecemeal Reforms in the U.S. Electricity Sector," Villanova PA.

Other Invited Addresses

2016.10.26 "Cost-effective detection of building defects," with G. Mainelis, J. Gong & J. Senick. Green & Healthy Buildings Seminar & webinar, U.S. Department of Housing & Urban Development, Washington, DC.

2016.06.28 "Anticipating the Effects of Occupant Behavior on Building Energy Use" Higher Education Facilities Management Association conference, Piscataway, NJ.

2016.01.21 "Decoupling the Costs and Benefits of Urban Density," 3rd Sino-U.S. Workshop on Sustainability Issues at the Nexus of Energy, Water, Climate and Air Pollution, Peking University, Beijing, China.

2015.05.29 "New ways to balance universals and context in planning education,"

- iCities Forum, National Cheng Kung University, Tainan, Taiwan.
- 2015.05.27 "Measuring progress in high- and low-capacity green cities," Kiaohsiung Sustainable City Symposium, Kiaohsiung, Taiwan.
- 2015.04.08 "Embracing multi-disciplinarity when studying energy usage, Shifting Energy Cultures, Drexel University, Philadelphia, PA.
- 2014.09.08 "Links between electric power and urban resilience," Second NSF Sino-U.S. Workshop on Sustainability Issues at the Nexus of Energy, Water, Climate and Air Pollution, Pasadena, CA.
- 2014.02.20 "Eco-evolutionary pathways for industrial cities," Yale University, New Haven, CT.
- 2013.7.3 "Simulating occupant responses to smart buildings," Tongji University, Shanghai, China.
- 2013.5.17 "Smarter, greener, friendlier Buildings," Reunion Lecture, Rutgers University, New Brunswick, NJ.
- 2013.5.9 "Green and healthy buildings," US Dept of Housing & Urban Development, Washington, DC.
- 2012.9.25 "Informing practical decisions with agent-based models," SCaRP Lecture, Georgia Institute of Technology, Atlanta, GA.
- 2012.8.18 "Occupant Behavior in High-Performance Buildings," NSF Research Collaboration Network on Sustainable Cities workshop, Estes Park, CO.
- 2012.7.17 "How User-Friendly Are Green Buildings?" Net-Zero House Symposium, Das Haus, White Plains, NY.
- 2012.6.25 "A Conscious Multi-Level Governance Effort," Urban Futures: Reflections on Rio+20 workshop, UNESCO, Paris, France.
- 2012.5.10 "Occupant Behavior in Energy-Efficient Buildings," Nanjing University, Nanjing, China.
- 2011.12.15 "Informing Practical Decisions with Agent-Based Models," University of Toronto, Toronto, Canada.
- 2011.12.12 "Redevelopment at Bell Labs," Citizens for Informed Land Use, Holmdel, NJ.
- 2011.11.30 "Learning about Innovating: Solar Decathlon," Rutgers University, Piscataway, NJ. 2011.11.23 "Informing Practical Decisions with Agent-Based

- Models," University of Surrey, Guildford, UK.
- 2011.11.15 "Informing Practical Decisions with Agent-Based Models," University of Birmingham, Birmingham, UK.
- 2010.10.27 "Prospectively Measuring Usability," AIA Chapter Annual Conference: The User, NJIT, Newark, NJ.
- 2010.09.30 "Green Building in Europe," Bloustein Research Seminar, Rutgers University, New Brunswick, NJ.
- 2010.07.07, "Designing buildings for real occupants: An agent-based approach," invited speaker. Gordon Research Conference on Industrial Ecology. New London, NH.
- 2010.05.17, "Alternative energy and land use," commissioned lecture at annual conference, Lincoln Institute of Land Policy, Cambridge, MA.
- 2010.05.17, "Designing buildings for real occupants: An agent-based approach," Center for Advanced Spatial Analysis, University College London, London, UK.
- 2010.03.26, "Designing buildings for real occupants: An agent-based approach," Energy and Industry Section, Technology Management and Policy Faculty, TU Delft, Netherlands.
- 2010.03.05, "Designing buildings for real occupants: An agent-based approach," EAWAG, ETH Zurich, Switzerland.
- 2010.02.11, "Designing buildings for real occupants: An agent-based approach," Institute for Systems Analysis and Sustainability, Karl-Franzen University, Graz, Austria.
- 2009.07.07 "Transit as a core climate change solution," invited testimony, U.S. Senate Banking Committee, Subcommittee on Housing, Transportation and Community Development, Washington, DC.
- June 17, 2009, "Productivity and IEQ," GreenBuildingsNY Conference, New York, NY.
- June 12, 2009, "The Impact of "Green" Trends on Local Master Plans and Zoning Ordinances," Current Issues in Planning and Zoning Conference, East Windsor, NJ.
- April 21, 2009, "Energy Policy Context," Off-shore Oil and Gas: At What Cost? League of Women Voters Forum, Monmouth County, NJ.
- April 18, 2009, "Are Smarter Buildings Better Buildings?," IEEE Computer Society Connecticut Spring Colloquium: Greentech Innovation, Bridgeport, CT.

February 27, 2009, "Alternative Fuels," Climate Working Group Meeting, North Jersey Transportation Planning Authority, Newark, NJ.

February 5, 2009, "Smarter Buildings," IEEE Industry Day: Engineering Your Own Future, Piscataway, NJ.

September 10, 2008, "Greenhouse gas emissions along the rural-to-urban gradient," Lecture Series, Department of Landscape Architecture, Rutgers University.

June 4, 2008, "Adapting and Planning Transportation Infrastructure Systems," Alternative Fuels and Transportation Infrastructure Forum, Rutgers University, Piscataway, NJ.

May 21, 2008, "Electricity, biofuels or hydrogen for vehicles: What should states do? Brown bag seminar & webcast, New York Metropolitan Transportation Council, New York, NY.

April 21, 2008, "The diffusion and impacts of green building technologies," Third Annual Energy Symposium, Rutgers Energy Institute, Piscataway, NJ.

April 8, 2008, "Balancing human health and ecological objectives in green buildings," Clinical Research and Occupational Medicine Grand Rounds, Environmental and Occupational Health Sciences Institute, Piscataway, NJ.

January 25, 2008, "Infrastructure factors related to urban health," Workshop on a Systems Analysis Approach to Health and Wellbeing in the Urban Environment, International Council on Science (ICSU) in collaboration with International Institute for Applied Systems Analysis, Vienna, Austria.

October 29, 2007, "Energy Targets for New Jersey," Energy and Climate Solutions Symposium, New Jersey Sustainable State Institute, New Brunswick, NJ.

October 5, 2007, "Scenarios for NJ's Energy Future, Franklin Township Global Warming Conference, Franklin, NJ.

May 10, 2007, "Agent-based modeling of niche market development," Rutgers Business School, Newark, NJ.

April 13, 2007, "Global Warming," Renaissance Community, Manchester, NJ.

March 30, 2007, "Regional Energy Technology Options," States and Climate Change: Leaders or Lab Rats Conference, Princeton University, Princeton, NJ.

March 14, 2007, "Global Warming and Your Town," panelist, Sierra Club, West Windsor, NJ.

February 26, 2007, "Focus the Nation: Global Warming Solutions for America,"

Rutgers University, Piscataway, NJ.

September 25, 2006, "Insights from Bottom-Up Models of Regulated Firms," USEPA Headquarters, Washington, DC.

September 21, 2006, "Possible New Jersey Responses to Global Warming," Bedminster, NJ.

August 16, 2006, "Schumpeter's Next Wave," Gordon Research Conference on Science & Technology Policy, Big Sky, MT.

May 12, 2006, "Discourses on Technology and Society," Engineers Forum on Sustainability, National Academy of Engineering, Washington, DC.

April 13, 2006, "Green Building Research Highlights," Strategies for Neighborhood Design and Development Symposium, Rutgers University, New Brunswick, NJ.

March 31, 2006, "Community Sustainability," Sustainability in New Jersey: A Summit for Educators, Carl Fields Center, Princeton University, Princeton, NJ.

December 6, 2005, "The Energy Crisis: Is Hydrogen the Answer?," MAGPI Global Issues Roundtable, Internet 2 interactive webcast to North American high schools, information at <http://www.magpi.net/globalissues.html>

September 19, 2005, "Sustainable Energy/Transportation," Global to Local Colloquium/Technology & Society Forum, New Jersey Institute of Technology, Newark, NJ.

September 15, 2005, "Petroleum Sector Overview," Hearing on High Gas Prices, Assembly Transportation Committee, New Jersey State House, Trenton, NJ.

November 18, 2004, "Organizational Factors Influencing Corporate Environmental Performance," Environmental Science Day speaker, USEPA Region 2 Offices, New York, NY.

October 29, 2004, "A Green Audit of Highland Park, NJ," Environmental Sciences Seminar Series, Cook College, Rutgers University, New Brunswick, NJ.

July 14, 2004, "Highland Park Green Community Audit," Environmental Sustainability in the Garden State Workshop, Meadowlands Environmental Center, Lyndhurst, NJ.

June 4, 2004, "Research Strategies for Environmental Management," School of the Environment, Nanjing University, Nanjing, China.

June 2, 2004, "Industrial Ecology," School of the Environment, Nanjing University, Nanjing, China.

May 20, 2004, "Connecting Students and Faculty to Community Sustainability Initiatives: Models and Strategies," NJHEPS Exploring New Sustainability Frontiers Workshop, Stevens Institute of Technology, Hoboken, NJ.

April 26, 2004, "A Multi-Agent Model of a Small Firm," USEPA Corporate Environmental Performance Workshop, Washington DC.

April 20, 2004, "Formulating and Implementing Public Policy for Hydrogen," IEEE Hydrogen Economy Symposium, Washington DC.

January 8, 2004, "Agency modeling," Industrial Symbiosis Research Symposium, Yale University, New Haven, CT.

September 22, 2003, "New Brunswick Comparative Risk Project," County Health Officials Mtg, New Jersey Dept. of Environmental Protection, Trenton, NJ.

April 7, 2003, "Simulating the environmental implications of organizational behavior," Industrial Ecology Workshop, Big Sur, CA.

November 12, 2002, "Agent-based modeling in industrial ecology," Science Policy Research Unit Seminar, University of Sussex, Falmer, UK.

November 5, 2002, "Agent-based modeling in industrial ecology," IndEcol Forum, Norwegian University of Science and Technology, Trondheim, Norway.

October 14, 2002, "Lessons from the New Jersey Comparative Risk Project," NATO Conference on Comparative Risk, Anzio, Italy.

March 19, 2002, "An Update on Energy Policy," Contemporary Public Issues Lecture, Sarasota Institute of Lifetime Learning, Sarasota, FL.

November 30, 2001, "Monte Carlo Simulation in Comparative Risk Analysis," Bloustein School Research Seminar, New Brunswick, NJ.

November 26, 2001, "Energy policy update for planners," New Jersey Chapter of the American Planning Association Annual Conference, New Brunswick, NJ.

May 23, 2001, "Teaching industrial ecology," Workshop on Sustainability and the Curriculum, New Jersey Higher Education Partnership for Sustainability, New Brunswick NJ.

March 26, 1998, "Industrial Ecology as a Framework for Achieving Long-term Environmental Goals." Northeast Recycling Council Spring Meeting, Atlantic City, NJ.

April 2, 1997, "Planning and the Geography of Environmentalism." Urban Planning Dept., University of California at Los Angeles, CA.

October 7, 1996, “Public Policy and the Geography of U.S. Environmentalism.”
Environmental Policy Studies Dept., New Jersey Institute of Technology, Newark
NJ.

December 4, 1995, "Outlook for Competition in Retail Electricity Markets in the
Northeast," 3rd National Electricity Forum, DOE/NARUC, Washington DC.

December 1, 1995, "Corporate Leaders' Environmental Perceptions," Center for
Environmental Studies, Erasmus University, Rotterdam, Netherlands.

November 29, 1995, "Environmental regulation as a joint decision problem for
government and industry," Science Policy Program, Utrecht University, Utrecht,
Netherlands.

June 8, 1995, “Piecemeal Reforms in the U.S. Electricity Sector,” Science Policy
Research Unit, University of Sussex, Brighton, UK.

May 15, 1995, “Prospects for Regional Cooperation,” Utility Compliance Network,
Washington, DC.

June 29, 1993, "Demand-Side Management -- A States' Rights Issue," New England
Conference of Public Utility Commissioners.

November 18, 1992, "Supplementing Authority with Credibility," New Jersey
Department of Environmental Protection and Energy.

July 14, 1992, "Communicative Planning," Board of Trustees, North American
Electric Reliability Council, San Francisco, CA.

March 26, 1992, "Distinguishing Between Heroic and Foolhardy Assumptions," New
Jersey Department of Environmental Protection and Energy.

April 14, 1991, "Existing Capacity – The Key to Reducing Emissions," Integrated
Resource Planning Office, U.S. Department of Energy.

Formal Paper Presentations

2017.10.12 “Environmental agency: Who can act on the Anthroposphere?”
Association of Collegiate Schools of Planning annual conference, Denver, CO.

2017.06.29 “Fine-grained inequity: Linking urban metabolism to indoor air quality.”
International Society for Industrial Ecology Biennial Conference, Chicago, IL.

2017.06.29 “How just is sprawl? Links among density and environmental justice in
US territories.” Ioanna Tsoulou & Clinton Andrews. International Society for
Industrial Ecology Biennial Conference, Chicago, IL.

2016.11.05 “The changing socioeconomic context of buildings: Implications for

- energy use." Association of Collegiate Schools of Planning annual conference, Portland, OR.
- 2015.10.24 "Energy-efficient re-use of existing commercial buildings," Association of Collegiate Schools of Planning annual conference, Houston, TX.
- 2015.07.08 "How do green buildings and sustainable cities interact?" Poster. International Society for Industrial Ecology Biennial Conference, University of Surrey, Guildford, UK.
- 2015.06.30 "Prospective modeling of occupant behavior during design," ASHRAE Summer Conference, Atlanta, GA.
- 2015.04.15 "Use cases for benchmarking," DOE BTO Peer Review Meeting, Tysons, VA.
- 2014.08.03 "Value added by incorporating occupant behavior into building energy models," Occupant Behavior 2014, Nottingham, UK.
- 2014.06.30 "Agent-based modeling of occupant behavior," Occupant behavior in building session, ASHRAE Annual Conference, Seattle, WA.
- 2013.7.16 "Retrofitting large portfolios of buildings for improved energy efficiency," Association of European Schools of Planning / Association of Collegiate Schools of Planning Quadrennial Conference, Dublin, Ireland.
- 2013.6.25 "Adaptive responses of urban systems to coastal flooding," International Society for Industrial Ecology Biennial Conference, Ulsan, South Korea.
- 2013.5.30 "Emerging synergistic combinations: Smart & friendly buildings," Environmental Design Research Association Annual Conference, Providence, RI.
- 2013.4.13 "Saving jobs and energy in a changing region," "Green buildings," and "Planning support systems," American Planning Association Annual Conference, Chicago, IL.
- 2012.11.14 "Improving buildings through simulation of occupant behavior," GreenBuild, San Francisco, CA.
- 2012.11.2 "Fiscal impacts of sea level rise on New Jersey's coastal communities," Association of Collegiate Schools of Planning annual conference, Cincinnati, OH.
- 2012.6.26 "Evaluating a Green Luxury Rental High-Rise Apartment Building in NYC," International Association of People-Environment Studies annual conference, Glasgow, Scotland.
- 2012.6.20 "Modeling Land Market Response to Climate Change in Coastal Zones,"

- poster with Haiyan Zhang, Gordon Research Conference on Industrial Ecology, Les Diablerets, Switzerland.
- 2012.5.31 "Evaluation of a Green Luxury High-Rise Apartment Building, Environmental Design Research Association annual conference, Seattle, WA.
- 2011.10.15 "Reflections on a Solar Decathlon," Association of Collegiate Schools of Planning annual conference, Salt Lake City, UT.
- 2011.09.08 "Can Hybrid Electric Vehicles Escape their Niche and Go Mainstream?" IEEE Vehicle Power and Propulsion Conference, Chicago, IL.
- 2011.06.09 "The Varied Habits of Building Occupants: Implications for Design and Environment," poster, International Society for Industrial Ecology biennial conference, Berkeley, CA.
- 2011.05.28 "Green Building in Austria," Environmental Design Research Association, Chicago, IL.
- 2010.10.09 "Green Building in Europe," Association of Collegiate Schools of Planning annual conference, Minneapolis, MN.
- June 23, 2009, "Evaluating the usability of green buildings," International Society for Industrial Ecology Conference, Lisbon, Portugal.
- May 18, 2009, "Are smarter buildings better buildings?," IEEE International Symposium on Technology and Society, Tempe, AZ.
- November 6, 2008, "Low Carbon Towns: How and When?," New Jersey Chapter of the American Planning Association Annual Conference, New Brunswick, NJ.
- October 27, 2008, "Pros and Cons of the 'Campus as Lab' Strategy," 5th Annual Conference of the Northeast Campus Sustainability Consortium, Princeton, NJ.
- July 8, 2008, "Reducing greenhouse gas emissions along the rural-to-urban gradient," Association of Collegiate Schools of Planning Annual Conference, Chicago, IL.
- November 2, 2007, "Energy Targets for NJ," New Jersey Chapter of the American Planning Association Annual Conference, New Brunswick, NJ.
- October 20, 2007, "Planning for energy conversion nodes," Association of Collegiate Schools of Planning Annual Conference, Milwaukee, WI.
- June 18, 2007, "Governance as Discourse: Setting Energy Targets in New Jersey," International Society for Industrial Ecology Conference, Toronto, ONT.
- April 18, 2007, "Governance as Discourse: Setting Energy Targets in New Jersey," Association of American Geographers Annual Conference, San Francisco, CA.

- November 10, 2006, "Setting Energy Targets for New Jersey," Association of Collegiate Schools of Planning Annual Conference, Fort Worth, TX.
- November 3, 2006, "Community Sustainability Planning," panelist, New Jersey Chapter of the American Planning Association Annual Conference, New Brunswick, NJ.
- March 9, 2006, "Determinants of Energy Use in U.S. Commercial Buildings," Association of American Geographers Annual Meeting, Chicago, IL.
- November 9, 2005, "Communicative, Ethical, and Anticipatory Dimensions of Engineering," ASME International Mechanical Engineering Congress and Exposition, Orlando, FL.
- October 27, 2005, "Selling Sustainability," Association of Collegiate Schools of Planning Annual Conference, Kansas City, MO.
- June 13, 2005, "A Multi-agent Model of Environmental Performance of a Polymer Processing Firm," International Society for Industrial Ecology Biennial Conference, Stockholm, Sweden.
- April 12, 2005, "Community as Classroom: Student Contributions to Green Planning in Highland Park, NJ," Pennsylvania Consortium for Interdisciplinary Environmental Policy Annual Conference, Philadelphia, PA.
- June 14, 2005, "A multi-agent model of environmental performance of a polymer processing firm," International Society for Industrial Ecology Conference, Stockholm, Sweden.
- March 21, 2005, "Towards self-sustaining high-rise buildings: Framework for an analysis of materials, energy, economic and social issues," poster presentation, Understanding and Harnessing Complexity in the Environment, 2005 National Science Foundation Biocomplexity Awardees Meeting, Arlington, VA, Uta Krogmann and Clinton Andrews.
- October 22, 2004, "Nested Sustainability Efforts: From Green Buildings to a Sustainable State," Association of Collegiate Schools of Planning Annual Conference, Portland, OR.
- March 15, 2004, "Personal networks and corporate environmental behavior," American Association of Geographers Annual Meeting, Philadelphia, PA.
- December 5, 2003, "Rethinking the electric grid: Implications for planners," Annual Planning Conference of the New Jersey APA, New Brunswick, NJ.
- July 11, 2003, "Legitimizing uncertain risk information," Association of Collegiate Schools of Planning/AESOP Joint Conference, Leuven, Belgium.

- June 30, 2003, "A multi-agent model of a polluting firm," International Society for Industrial Ecology Conference, Ann Arbor, MI.
- November 22, 2002, "Doing joint fact-finding," Association of Collegiate Schools of Planning Annual Conference, Baltimore, MD.
- June 27, 2002, with John Posey & Mookhan Kim, "Goals & Indicators of Sustainability for New Jersey," Mid-Atlantic Sustainability Conference, Newark, NJ.
- May 11, 2002, with Robert Axtell, "Agent-based Models of Industrial Ecosystems," UCLA Computational Social Sciences Conference, Lake Arrowhead, CA.
- November 26, 2001, "Energy policy update for planners," New Jersey Chapter of the American Planning Association Annual Conference, New Brunswick, NJ.
- November 14, 2001, "Solving new environmental problems by going beyond regulation and response," Inaugural Conference of the International Society for Industrial Ecology, Leeuwenhorst, Netherlands.
- November 8, 2001, "Does electricity deregulation promote eco-efficiency?," Association of Collegiate Schools of Planning Annual Conference, Cleveland, OH.
- November 2, 2001, "The practice of joint fact finding," Annual Research Conference of the Association for Public Policy Analysis and Management, Washington, DC.
- July 6, 2001, "Humble Analysis: The Practice of Joint Fact Finding," International Symposium on Technology and Society, University of Connecticut, Stamford, CT.
- June 17, 2001, "Industrial ecology as applied social science," National Symposium on Sustainability, Clarkson University, Potsdam, NY.
- March 2, 2001, "Buried Commitments: Determinants of the Use of District Energy Systems in the United States." Association of American Geographers Annual Conference, New York, NY.
- November 2, 2000, "Analyzing Quality-of-Place," Association of Collegiate Schools of Planning Annual Conference, Atlanta, GA.
- October 23, 1999, "Trenton's Industrial Ecology," Association of Collegiate Schools of Planning Annual Conference, Chicago, IL.
- May 7, 1999, "Trenton's Industrial Ecology: Illustrative Environmental and Economic Impacts of State Government on the Capital of New Jersey." Northeast Regional Meeting of the Regional Science Association International, Cornell University,

- Ithaca, NY.
- November 5, 1998, "Process Is the Priority: Evaluating a Decade of Comparative Risk." Annual Conference of the Association of Collegiate Schools of Planning, Pasadena, CA.
- March 28, 1998, "Determinants of Aggressive State Regulatory Policy Reform." Association of American Geographers Annual Conference, Boston, MA.
- November 9, 1997, "Scale Issues in Implementing Industrial Ecology." Annual Conference of the Association of Collegiate Schools of Planning, Fort Lauderdale, FL.
- November 7, 1997, "The Roles of Stakeholder- and Peer-Review at the OTA." Annual Research Conference of the Association for Public Policy Analysis and Management, Washington, DC.
- November 1, 1996, "Electricity Sector Reform in Federations." Annual Research Conference of the Association for Public Policy Analysis and Management, Pittsburgh, PA.
- July 25, 1996, "Who's Managing Whom: A Test of the Network Model of Environmental Regulation." Annual Conference of the Association of Collegiate Schools of Planning, Toronto, Ontario.
- November 11, 1995, "(Un)Natural Regions: Spatial Organization of the Russian and U.S. Electricity Sectors," North American Meetings of the Regional Science Association International, Cincinnati OH.
- October 21, 1995, "Communicative Analysis: Informing Shared decisions at the TVA." Annual Conference of the Association of Collegiate Schools of Planning, Detroit, MI.
- July 7, 1995, "Roles for Regions: Comparing Russian and U.S. Electricity Reforms," Annual International Conference of the International Association for Energy Economics, Washington, DC.
- November 18, 1994, "A Geography of Environmental Preferences," North American Meetings of the Regional Science Association International, Niagara Falls, Ontario.
- November 5, 1994, "Regulating Regional Power Systems." Annual Conference of the Association of Collegiate Schools of Planning, Tempe AZ.
- October 15, 1993, "Electricity and Federalism," Annual International Conference of the International Association for Energy Economics, Seattle WA.
- October 31, 1992, "Promoting Clean Technology--A Comparative Study." Annual

- Conference of the Association of Collegiate Schools of Planning, Columbus OH.
- October 26, 1992, "Electric Competition and Engineering Imperatives," Annual North American Conference of the International Association for Energy Economics, New Orleans LA.
- July 10, 1991, "Valuing Environmental Externalities in Group Decision-making Processes." Annual Conference of the Association of Collegiate Schools of Planning (1st Joint Conference with AESOP), Oxford UK.
- October 2, 1990, "Cost-effective Emissions Reductions: Combining New England's Options into a Coordinated Strategy," Annual North American Conference of the International Association for Energy Economics, Ottawa, Ontario,(co-authored with S. Connors).

Invited Participation in Meetings as Panelist or Discussant

- 2017.05.02 "Editors' Voices: Journal Editors Roundtable." Environmental Design Research Association annual conference, Madison, WI.
- 2017.05.10 "Data, Technologies & Systems panel," Beyond Visualization: A Roadmap To The Next Generation Building Design Environment For Sustainability, NSF Research Collaboration Network workshop, New Orleans, LA.
- 2017.03.10 "Mentoring Planning Faculty for Promotion and Tenure," panel presentation, Association of Collegiate Schools of Planning Administrators Conference, Reston, VA.
- 2017.01.26 "Celebrating 50 years: Looking back and forward for the Bloustein planning program, panel presentation, American Planning Association NJ Chapter annual conference, New Brunswick, NJ.
- 2016.11.03 "Journal Editors' Roundtable," panelist & organizer, Association of Collegiate Schools of Planning Administrators Conference, Portland, OR.
- 2016.10.28 "Development and redevelopment in vulnerable locations," panel presentation, Taking Chances on the Shore, book launch symposium, New Brunswick, NJ.
- 2016.10.20 "How do society and the Internet of Things interact?," panel presentation, IEEE Technology Time Machine conference, San Diego, CA.
- 2016.10.19 "Planning & design of integrated infrastructure systems," panelist, Toward Developing A Blue Print for More Sustainable and Resilient Infrastructure, workshop sponsored by the U.S. National Academy of Engineering and the Chinese National Academy of Engineering, Shenzhen, China.

- 2016.05.17 Facilitator of IEEE Experts in Technology & Policy Forum on Internet Governance, Beijing, China.
- 2016.02.05 Facilitator of IEEE Experts in Technology & Policy Forum on Internet Governance, Washington, DC.
- 2015.10.07 “Organizations, occupants, and energy use in buildings,” NSF Research Coordination Network on Sustainable Human-Building Ecosystems workshop on dynamic life cycle assessment, Pittsburgh, PA.
- 2015.08.10 Facilitator of IEEE Experts in Technology & Policy Forum on Internet Governance, Tel Aviv, Israel.
- 2015.05.18 Facilitator of IEEE Experts in Technology & Policy Forum on Internet Governance, San Jose, CA.
- 2015.03.30 "The building of the future: occupant characteristics," IEA Symposium on Modeling Occupant Behavior (Annex 66), Lawrence Berkeley National Laboratory, Berkeley, CA.
- 2014.10.10 Organizer, Workshop on using information from buildings to improve cities, NSF Research Collaboration Network for Sustainable Cities, Rutgers University, New Brunswick, NJ.
- 2013.10.29 Panelist, Social Implications of Smart Cities panel, and Moderator, Public Policy panel, IEEE Smart Cities Kickoff Event, Guadalajara, Mexico.
- 2013.6.27 Discussant, Paper session on urban energy, International Society for Industrial Ecology Biennial Conference, Ulsan, South Korea.
- 2012.11.29 Panelist, Integrating Social and Behavioral Energy Research Activities, American Academy of Arts and Sciences, Washington, DC.
- 2012.11.3 Discussant for energy session, Association of Collegiate Schools of Planning annual conference, Cincinnati, OH.
- 2012.4.26 Panelist, Green and Healthy Buildings, Healthy Sustainable Communities Symposium, E.J. Bloustein School, Rutgers University, New Brunswick, NJ.
- 2011.10.15 Discussant, Paper sessions on energy planning and climate adaptation planning, Association of Collegiate Schools of Planning, Salt Lake City, UT.
- 2010.10.09 Discussant, Paper session on climate change planning, Association of Collegiate Schools of Planning annual conference, Minneapolis, MN.

April 15, 2009, Panelist. Seminar: “The Energy Master Plan: Impact and

Opportunity,” National Association of Industrial and Office Properties, New Jersey Chapter, Edison, NJ.

February 25, 2009, Panelist. “What more should New Jersey know about transforming our energy infrastructure: Is there more to green than meets the eye?” Hall Institute of Public Policy, Trenton, NJ.

February 9, 2009, Panelist. “New Jersey Hydrogen Learning Center Annual Forum,” New Brunswick, NJ.

November 17, 2008, Panelist. “Greenhouse Gas Roundtable,” North Jersey Transportation Planning Authority, Newark, NJ.

October 24, 2008, Panelist. “Traditional vs. Non-traditional Planning: How do schools balance education for U.S. local government practice with education for developers, non-profits, and overseas work?” American Collegiate Schools of Planning Annual Leadership Meeting, Bethesda, MD.

July 17, 2008, Panelist. Roundtable on the Energy Master Plan, Commerce and Industry Association of New Jersey, Paramus, NJ.

July 10, 2008, Discussant. Paper session on urban sustainability. Association of Collegiate Schools of Planning Annual Conference, Chicago, IL.

October 19, 2007, Panelist. Roundtable on global warming policy. Association of Collegiate Schools of Planning Annual Conference, Milwaukee, WI.

September 19, 2007, “Legislative issues,” panelist and moderator, IEEE Symposium on Plug-in Hybrid Electric Vehicles, Washington, DC.

November 9–10, 2006, Discussant (x2). Paper sessions on (1) energy and air quality, and (2) once and future tools for planning practice. Association of Collegiate Schools of Planning Annual Conference, Fort Worth, TX.

September 20, 2006, synthesis panelist, The Climate Ahead: Global Change, Local Impacts, Rutgers University, New Brunswick, NJ.

April 20, 2006, Master of Ceremonies, Wind Power: Technology Economics and Politics Symposium, IEEE/AWEA/EWIG/NERC, Washington DC.

December 2, 2005, Panelist, The Race for Space: The Politics and Economics of State Open Space Programs, Woodrow Wilson School, Princeton University.

October 30, 2005, Discussant. Paper session on environmental planning. Association of Collegiate Schools of Planning Annual Conference, Kansas City, MO.

March 30, 2005, Discussant for Peter Huber's energy policy lecture on "The Bottomless Well," E.J. Bloustein School, Rutgers University, New Brunswick,

- NJ.
- October 22, 2004, Discussant. Paper session on environmental planning. Association of Collegiate Schools of Planning Annual Conference, Portland, OR.
- July 9, 2003, Discussant. Paper session on environmental planning. Association of Collegiate Schools of Planning Annual Conference, Leuven, Belgium.
- November 22, 2002, Discussant. Paper session on environmental planning. Association of Collegiate Schools of Planning Annual Conference, Baltimore, MD.
- November 8, 2001, Discussant. Environmental Planning session, Annual Conference of the Association of Collegiate Schools of Planning, Cleveland, OH.
- December 7, 2000, Co-chair of session on Pollution Prevention and Industrial Ecology, National Conference on Science, Policy and the Environment, Washington, DC.
- April 18, 2000, Panelist. Sustainable Business Conference, Newark, NJ, Rutgers University School of Management.
- November 24, 1999, Discussant. Environmental Planning session, Annual Conference of the Association of Collegiate Schools of Planning, Chicago, IL.
- November 15, 1999, Discussant. Workshop on Industrial Ecology and the EPA, US Environmental Protection Agency, Washington, DC.
- May 20, 1999, Panelist and session chair. New Jersey Future's Sustainable State Leadership Conference, E.J. Bloustein School, Rutgers University, New Brunswick, NJ.
- September 24, 1998, Session Leader. North American Workshop on International Human Dimensions Program-Industrial Transformation, Boston University, Boston, MA,.
- June 7–12, 1998, Session Leader. Gordon Research Conference on Industrial Ecology. New London, NH,.
- April 30, 1998, Organizer and Speaker. Workshop on Policy Applications of Industrial Ecology, " Linking Industrial Ecology to Decision-Making." Washington, DC, White House Conference Center.
- May 8, 1997, Panelist. New Jersey Future's Sustainable State Leadership Conference, Princeton University.
- September 25, 1996, Panelist. Community Policy Forum on Environmental Policy, Princeton University.

December 8, 1995, Panelist. Princeton Environmental Institute, Roundtable on the New Jersey Green Plan, Princeton University.

August 22, 1995, Discussant, National Academy of Science, Forum on Science and Technology Goals for the Environment, Beckman Center, Irvine, CA.

June 5, 1995, Panelist. AT&T Industrial Ecology Symposium, AT&T Engineering Research Center, Hopewell NJ.

April 6, 1995, Panelist. Carnegie Mellon University, Pittsburgh PA, 25th Anniversary Workshop for Faculty from Technology and Policy Programs.

October 31, 1993, Discussant. Environmental Planning session, Annual Conference of the Association of Collegiate Schools of Planning, Philadelphia, PA.,.

May 1, 1992, Panelist. Symposium on Technology Development in Japan and the United States: The Role of Policy, Princeton University.

April 28, 1992, Panelist. Symposium on State Leadership in Industrial Pollution Prevention, Princeton University.

April 22, 1992, Panelist. Whole Earth Center/Princeton Environmental Action, Earth Day Symposium, "Environment and the Economy: Perfect Together?"

Other Participation in Major Meetings

July 17-19, 2017, Organizer (with Frank Popper), JPER Writers Workshop for Young Scholars, New Brunswick, NJ.

July 21-22, 2016, Organizer (with Frank Popper), JPER Writers Workshop for Young Scholars, New Brunswick, NJ.

June 19–24, 2016, Invited participant. Gordon Research Conference on Industrial Ecology, Stowe, VT.

2014.10.10 Organizer, Workshop on using information from buildings to improve cities, NSF Research Collaboration Network for Sustainable Cities, Rutgers University, New Brunswick, NJ.

June 17–22, 2012, Invited participant. Gordon Research Conference on Industrial Ecology, Les Diablerets, Switzerland.

July 11–16, 2010, Invited participant. Gordon Research Conference on Industrial Ecology, New London, NH.

August 17–22, 2008, Invited participant. Gordon Research Conference on Industrial

Ecology, New London, NH.

August 6–11, 2006, Invited participant. Gordon Research Conference on Industrial Ecology, Oxford, UK.

August 13–18, 2006, Invited participant. Gordon Research Conference on Science & Technology Policy, Big Sky, MT.

August 1–6, 2004, Invited participant. Gordon Research Conference on Industrial Ecology, Oxford, UK.

June 9–14, 2002, Invited participant. Gordon Research Conference on Industrial Ecology, New London, NH.

September 25–28, 2001, Invited participant. National Science Foundation Workshop on Research Needs in Environmentally Benign Manufacturing, Ypsilanti, MI.

June 14, 2001, Invited participant. Conference on Providing Science and Technology Advice to the U.S. Congress, Carnegie Mellon U./AAAS, Washington, DC.

June 11–16, 2000, Invited participant. Gordon Research Conference on Industrial Ecology, New London, NH.

February 26, 1999, Invited participant. Scientific Meeting of the International Human Dimensions Program-Industrial Transformation, Royal Netherlands Academy of Sciences, Amsterdam, Netherlands.

July 27, 1995, Panel Organizer, Implications of Deregulation for Forecasting. IEEE Power Engineering Society Summer Meeting, Portland OR.

July 20–31, 1992, Invited participant. Global Change Institute on Industrial Ecology, University Corporation for Atmospheric Research Office of Interdisciplinary Earth Studies, Snowmass CO.

June 18, 1991, Invited participant. Electric Power Research Institute and U.S. Department of Energy, Invited Expert Workshop on Energy Modeling, Washington, DC.

Webinars

2016.08.24 “Social implications of and on IoT.” IEEE Internet of Things Initiative. <http://iot.ieee.org/education/webinars.html>.