

CURRICULUM VITA

CARL J. BLUMSTEIN

Director, California Institute for Energy and Environment (CIEE), University of California,
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Professional Experience

- 7/02 – Director, California Institute for Energy and Environment (CIEE), University of California. Founded in 1990, CIEE became affiliated with CITRIS in 2018. We initiate, plan, manage, and administer public-interest energy research. We partner with the California Energy Commission, the California Public Utilities Commission, the U.S. Department of Energy, utilities, and other research sponsors to help form the agenda for research in energy science, technology, and policy—identifying the most critical avenues on the complex route to California’s energy goals. CIEE then brings to bear the expertise of world-class researchers, from UC and around the country, to do the innovative work that will pave the way to California’s success. CIEE is engaged in research on topics that include energy efficiency in buildings and industry, global climate change, demand response, and integration of renewable energy generation into the electricity grid.
- 6/11 – 6/21 Director, Sustainable Infrastructures Initiative at UC’s Center for Information Technology Research in the Interest of Society ([CITRIS](#)). This initiative engaged a vibrant community of researchers and innovators from UC Berkeley, UC Davis, UC Santa Cruz, UC Merced and Lawrence Berkeley National Laboratory ([LBNL](#)). With partners in industry and government, this powerful research collaboration was focused on creating an integrated information infrastructure that will improve the efficiency and sustainability of our energy, water and transportation networks. [This appointment ended when CIEE and the Sustainable Infrastructures Initiative were merged.]
- 4/17 – 3/18 Acting Director, Berkeley Energy and Climate Institute (BECI). BECI was the coordinating hub for energy and climate research at UC Berkeley. BECI fostered collaboration between UC Berkeley, the Lawrence Berkeley National Laboratory (LBNL) and other external partners. The Institute promoted interdisciplinary research by integrating science, technology, business and policy. BECI was dedicated to advancing research, innovation, and new educational programs to cultivate the next generation of energy innovators.
- 2/15 – 4/17 Deputy Director, BECI
- 10/81 – 4/09 Energy Policy Analyst, University of California Energy Institute (UCEI), Research and writing on energy efficiency and energy policy. Areas of expertise: surveys of residential and commercial energy consumption, electricity demand forecasting,

assessments of energy conservation potential, adjustable speed drives for electric motors, alternatives to compressors for cooling, utility/customer communication, computing and control, energy R&D policy, energy markets, and the design of energy efficiency programs.

- 1/91 – 7/02 Associate Director, California Institute for Energy Efficiency (CIEE). Assisted the Director in all aspects of the management of CIEE. As one of the founders of CIEE, I helped to establish CIEE as a utility research consortium focussed solely on energy efficiency and then helped CIEE to make the transition to public goods funding and a broader research mission.
- 9/75 – 10/81 Energy and Environment Policy Analyst, Energy and Environment Division, Lawrence Berkeley Laboratory, Berkeley, California. Project Manager, research projects sponsored by the CEC, the President's Council on Environmental Quality, and the U.S. Department of Energy. Areas of research: models for forecasting residential electricity sales, assessments of energy conservation potential, social and institutional barriers to energy conservation, and assessing data from surveys of residential energy consumption.
- 11/80 – 5/81 Special Consultant, California Energy Commission, Sacramento, California. Assisted the Commission in redesigning its non-residential energy consumption data system.
- 12/78 – 5/79 Special Consultant, California Energy Commission, Sacramento, California. Assisted the Commission in preparing its second biennial forecast of electricity sales.
- 9/74 – 9/75 Technical Assistant to the Director, Energy and Environment Division, Lawrence Berkeley Laboratory. Scientific and administrative responsibilities in energy and environmental research. Worked with the director and other researchers to develop an energy conservation research program at the laboratory.

Education

B.A. (1966) Chemistry, Reed College, Portland, Oregon. Bachelor's thesis: "Localization of Alkaline Phosphatase in *E. Coli*."

M.S. (1968) Chemistry, San Diego State University, San Diego, California. Master's thesis: "Thermal Isomerization and Decomposition of 1,1,2,2-Tetramethyl Cyclopropane."

Ph. D. (1975) Chemistry, University of California, San Diego and San Diego State University, San Diego, California. Doctoral Thesis: "Part One: The Modified Moments Method; Part Two: A New Mechanism for Ozone-Olefin Reactions."

University and Public Service

Member (2014-) University of California Global Climate Leadership Council

Chairman of the Board (1993-), American Council for an Energy-Efficient Economy

Series Editor (1985-99), American Council for an Energy-Efficient Economy, book series on Energy Conservation and Energy Policy.

President (1990-93), American Council for an Energy-Efficient Economy.

Managing Director (1987-90), American Council for an Energy-Efficient Economy.

Program Chairman (1983-84), American Council for an Energy-Efficient Economy 1984 Summer Study on Energy Efficiency in Buildings.

Member (1997-2003), Board of Governors, California Power Exchange Corporation

Member (1993-), Board of Trustees, Consortium for Energy Efficiency.

Vice-Chairman of the Board (1996-99, 2002-05, 2008-10), Board of Trustees, Consortium for Energy Efficiency.

Member (1991-), Advisory Committee, Center for Environmental Design Research, University of California, Berkeley.

Chairman (1996-98), Advisory Committee, Center for Environmental Design Research, University of California, Berkeley.

Secretary-Treasurer (1985-2000) Energy Auditor and Retrofitter, Inc. (publisher of Home Energy Magazine).

Chairman (1991-93, 1995-97) Community Energy Services Corporation (non-profit corporation providing energy services in Berkeley, California).

Member (1977-91, 1993-99), Vice Chairman (1978-1981), and Chairman (1981-1991), City of Berkeley Energy Commission.

Books

What Works: Documenting Energy Conservation in Buildings, J. Harris and C. Blumstein, eds. American Council for an Energy-Efficient Economy, Washington, D.C. (1984).

Publications and Reports

“A Complication in the Thermal Reactions of 1,1,2,2-Tetramethyl Cyclopropane,” C. Blumstein, D. Henfling, C. M. Sharts and H. E. O’Neal, *Int. J. Chem. Kinetics*, 2, 1 (1970).

“Prevention of Alpha Counter Contamination by Electrodeless Discharge Deposition of Silicon Nitride Thin Films,” C. Blumstein, R. Melgard, and W. Stafford, *Radiochem. Lett.*, 5, 29 (1970).

“Modified Moments for Harmonic Solids,” J. C. Wheeler and C. Blumstein, *Phys. Rev. B*, 6, 4380 (1972).

“A New Mechanism for Gas Phase Ozone-Olefin Reactions,” H. E. O’Neal and C. Blumstein, *Int. J. Chem. Kinetics*, 5, 397 (1973).

“The Modified Moments Method: Application to Harmonic Solids,” C. Blumstein and J. C. Wheeler, *Phys. Rev. B*, 8, 1964 (1973).

“Analysis of Spectral Densities Using Modified Moments.” J. C. Wheeler, M. G. Prais and C. Blumstein, *Phys. Rev. B*, 8, 1964 (1973).

Electrical Energy Consumption in California. Data Collection and Analysis, S. M. Berman, C. Blumstein, et al., Lawrence Berkeley Laboratory, UCID-3847 (1976).

Preliminary Report on the Assessment of Energy Conservation Strategies and Measures, S. M. Berman, C. Blumstein, et al., Lawrence Berkeley Laboratory, Report to the California Energy Commission. (1976).

Electrical Load Management for the California Water System, B. Krieg, I. Lasater, and C. Blumstein, Lawrence Berkeley Laboratory, LBL-6367 (1977).

Potential Electricity Impacts of a 1978 California Drought, J. Sathaye, C. Blumstein, et al., Lawrence Berkeley Laboratory, LBL-6867 (1977).

Monthly Fuel Consumption Report - Manufacturing Plants, S. Alter, C. Blumstein, et al., a Data Validation Report, Lawrence Berkeley Laboratory, LBL-8435 (1978).

“Data Needs for Regional Residential Electricity Sales Forecasting,” C. Blumstein, in *More for Less: Information Systems in an Era of Limits*, R. Schmitt, ed., Urban and Regional Information Systems Association, Chicago, Illinois (1979).

Inventory of Energy Conservation Potential in California: The Cement Industry, P. Kuhn, C. Blumstein, K. Hudson, and C.M. York, Lawrence Berkeley Laboratory, LBL-9319 (1979).

“Residential Electricity Demand in California: Results and Methodology,” C. Blumstein, et al., in *Proceedings of the Second International Conference on Energy Use Management*, Pergamon, New York, N.Y. (1980).

“Overcoming Social and Institutional Barriers to Energy Conservation,” C. Blumstein, B. Krieg, L. Schipper, and C. M. York, *Energy (Int.J.)*, 5, 355 (1980).

An Assessment of the National Interim Energy Consumption Survey, C. Blumstein, C. M. York, and W. Kemp, Energy and Resources Group, ERG-81-1 (1981).

“Understanding Energy Consumption: Information Needs for Public Policy,” C. Blumstein, in J. P. Harris and J. M. Hollander eds., *Improving Energy Efficiency in Buildings: Progress and Problems*, p.1.7.1, Am. Council for an Energy-Efficient Economy, Washington, D.C. (1982).

Supplemental Studies of the National Interim Energy Commission Survey, C. Blumstein, C. M. York, et al., Energy and Resources Group, ERG-82-3 (1982).

Technical Notes on Assessing the Potential for Energy Conservation in San Diego, C. Blumstein, et al., Universitywide Energy Research Group, UER-103 (1983).

Forecasting Commercial Energy Consumption in California: Issues Related to Forecasting Commercial Floorspace, C. Zabin, C. Blumstein, et al., Universitywide Energy Research Group UER-139 (1984).

“Energy Conservation on the Campus,” C. Blumstein, in J. Harris and C. Blumstein, eds., *What Works: Documenting Energy Conservation in Buildings*, p.281, Am. Council for an Energy-Efficient Economy, Washington, D.C. (1984).

Analysis of the San Diego Gas and Electric Company's 1982 Commercial Energy Use Survey, C. Blumstein, et al., Universitywide Energy Research Group, UER-144, (1985).

“Energy Auditing,” C. Blumstein, and P. Kuhn, in M. Kutz, ed., *Handbook of Mechanical Engineering*, Wiley, New York, N.Y. (1986).

“On the Administration of 'Small' Energy Conservation Projects in Commercial Buildings,” C. Blumstein and P. Keilch, *Proc. 1986 Summer Study on Energy Efficiency in Buildings*, 3, 21, Am. Council for an Energy-Efficient Economy, Washington, D.C. (1986).

“Distribution of the Intensity of Electricity Use in Commercial Premises Appears to be Highly Skewed,” C. Blumstein, C. B. McGuire, and S. Buller, *Energy and Buildings*, 10, 151 (1987).

“Non-Sampling Error in Surveys of Residential Energy Consumption,” C. Blumstein, *Energy (Int.J.)*, 12, 1317 (1987).

“Changing Needs in Electricity Demand Forecasting: A California Perspective,” J. Eto, C. Blumstein, and M. Jaske, *Proc. 1988 Summer Study on Energy Efficiency in Buildings*, 8, 70, Am. Council for an Energy-Efficient Economy, Washington, D.C. (1988).

“Demand-Side Management Opportunities Through the Use of Energy-Efficient Motor Systems,” A. de Almeida, S. Greenberg, and C. Blumstein, *IEEE Transactions on Power Systems, PWR5-5*, 852 (1990).

“An Application of Electronic Adjustable Speed Drives: Flow Control in Circulating Water Loops,” S. Greenberg, C. Blumstein, and R. Grigorov, *Proc. 1990 Summer Study on Energy Efficiency in Buildings*, 1, 115, Am. Council for an Energy-Efficient Economy, Washington, D.C. (1990).

Alternatives to Compressor Cooling in California Climates: Review and Outlook, H. Feustel, A. de Almeida, and C. Blumstein, California Institute for Energy Efficiency, Res. Rpt. Series-1 (1991).

“Wind Power in California: A Case Study of Targeted Tax Subsidies,” A. J. Cox, C. Blumstein, and R. J. Gilbert, in R. J. Gilbert, ed., *Regulatory Choices*, UC Press, Berkeley (1991).

“Creating Institutions for Energy-Efficiency R&D: New Roles for States and Utilities,” J. P. Harris, A. H. Rosenfeld, C. Blumstein, and J. P. Millhone, *Proc. 1992 Summer Study on Energy Efficiency in Buildings*, 6, 91, Am. Council for an Energy-Efficient Economy, Washington, D.C. (1992).

“Alternatives to Compressor Cooling in Residences,” H. Feustel, A. de Almeida, and C. Blumstein, *Energy and Buildings*, 18, 269 (1992).

“It's OK to Want to Be Cool [Comment on ‘On Condis and Coolth’],” C. Blumstein, *Energy and Buildings*, 18, 259 (1992).

“The Energy Saving Potential of Precooling Incoming Outdoor Air by Indirect Evaporative Cooling,” P. Chen, H. Qin, Y. J. Huang, H. Wu, and C. Blumstein, *ASHRAE Trans.*, 99(1), 322 (1993).

“Utility and Customer Communication, Computing, and Control (UC-3C) Technologies,” C. Blumstein, A. H. Rosenfeld, and H. Akbari, in Oren, S. S., and S. A. Smith, eds., *Service Opportunities for Electric Utilities: Creating Differentiated Products*, Kluwer, Boston (1993).

“The Cost of Energy Efficiency [Comment on ‘What Does Utility-Subsidized Energy Efficiency Really Cost’],” C. Blumstein and J. P. Harris, *Science*, 261, 970 (1993).

“Energy-Efficiency Research, Development and Demonstration: New Roles for US States,” J. P. Harris, C. Blumstein, A. H. Rosenfeld, and J. P. Millhone, *Energy Policy*, 21, 1205 (1993).

“A Guide to the Blue Book: Issues in California's Electric Industry Restructuring and Reform,” C. Blumstein and J. Bushnell, *The Electricity Journal*, 7(7), 18 (1994).

“How High Are Option Values In Energy-Efficiency Investments?” A. H. Sanstad, C. Blumstein and S. E. Stoft, *Energy Policy*, 23, 739 (1995).

“Technical Efficiency, Production Functions and Conservation Supply Curves,” C. Blumstein and S. E. Stoft, *Energy Policy*, 23, 765 (1995).

“Another Look at the Strategic Petroleum Reserve: Should Its Oil Holdings Be Privatized?” C. Blumstein and P. Komor, *J. Policy Anal. and Management*, 15(2), 271 (1996).

“Does the Air-Conditioning Engineering Rubric Work in Residences?” K. Brown, C. Blumstein, L. Lutzenhiser, B. Hackett, and Y. J. Huang, *Proc. 1996 Summer Study on Energy Efficiency in Buildings*, 8, 11, Am. Council for an Energy-Efficient Economy, Washington, D.C. (1996).

“Public Interest Research and Development in the Electric and Gas Utility Industries,” C. Blumstein and S. Wiel, *Utilities Policy*, 7, 191 (1998). [An earlier version was published, with other material, as a report: *Public Interest Research and Development in the Electric and Gas Utility Industries*, C. Blumstein, R. Scheer, and S. Wiel, National Council on Competition and the Electric Industry, National Conference of State Legislatures, Denver, CO (1998).]

Pricing Electricity for Default Customers: Pass Through or Performance-Based Rates? Power Working Paper PWP-066, UC Energy Institute, Berkeley, CA (August 1999).

“A Theory-based Approach to Market Transformation,” C. Blumstein, S. Goldstone, and L. Lutzenhiser, *Energy Policy*, 28, 137 (2000).

“From Technology Transfer to Market Transformation,” C. Blumstein, S. Goldstone, and L. Lutzenhiser, *Proc. 2001 Conference on Energy Efficiency*, European Council for an Energy Efficient Economy, Paris, France (2001).

“The California Electricity Crisis: Editors’ Introduction,” C. Blumstein and R. Green, *Journal of Industry, Competition and Trade*, 2(1), 5 (2002)

“The History of Electricity Restructuring in California,” C. Blumstein, L. S. Friedman, R. J. Green, *Journal of Industry, Competition and Trade*, 2(1), 9 (2002).

“Who Should Administer Energy-Efficiency Programs?” Carl Blumstein, Charles Goldman, and Galen Barbose, *Energy Policy*, 33(8), 1053 (2005)..

“Towards a Sustainable Energy Balance: Progressive Efficiency and the Return of Energy Conservation” Jeffrey Harris, Rick Diamond, Maithili Iyer, Christopher Payne, Carl Blumstein, Hans-Paul Siderius, *Energy Efficiency* 1(3), 175(2008).

“Demand Side Management and Energy Efficiency Revisited,” Auffhammer, Maximilian, Carl Blumstein and Meredith Fowlie.. *The Energy Journal*. 29(3), 91(2008).

“Program Evaluation and Incentives for Administrators of Energy-Efficiency Programs: Can Evaluation Solve The Principal/Agent Problem?” Carl Blumstein, *Energy Policy* 38, 6232–6239 (2010).

“Energy Efficiency: Choice Sets, Market Transformation, and Innovation.” Carl Blumstein, Seymour Goldstone and Loren Lutzenhiser, Ch 20 in *People-Centered Initiatives for Increasing Energy Savings*, Ehrhardt-Martinez, Karen and John A. Laitner (eds.) Am. Council for an Energy-Efficient Economy, Washington, D.C. (2010).

“Energy Efficiency, Information Technology, and the Electricity System.” Carl Blumstein, *Proc. 2011 Conference on Energy Efficiency*, European Council for an Energy Efficient Economy, Paris, France (2011).

“Rethinking the Energy-Efficiency Gap: Producers, Intermediaries, and Innovation.” Carl Blumstein and Margaret Taylor, *Proc. 2013 Conference on Energy Efficiency*, European Council for an Energy Efficient Economy, Paris, France (2013).

“Experimentation and the Evaluation of Energy Efficiency Programs.” Edward Vine, Michael Sullivan, Loren Lutzenhiser, Carl Blumstein and Bill Miller. *J Energy Efficiency*, Springer Netherlands (2014).

“Open Software-Architecture for Building Monitoring and Control.” Carl Blumstein, David Culler, Gabe Fierro, Therese Peffer and Marco Pritoni. *Conference Proceeding Sustainable Places 2015*, Sigma Orionis, Sophia Antipolis, France (2015).