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PROFESSIONAL EXPERIENCE

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PROFESSOR AND DIRECTOR, INSTITUTE OF PUBLIC UTILITIES POLICY RESEARCH AND EDUCATION, COLLEGE OF SOCIAL SCIENCE, MICHIGAN STATE UNIVERSITY (Director from April 2002 to present). The Institute is self-sustaining and supports informed, effective, and efficient regulation of the infrastructure-intensive network industries providing essential electricity, natural gas, water, and broadband services. Dr. Beecher designs curricula, selects program faculty, manages operations, and lectures for the Institute's nationally and internationally recognized educational programs. She also leads the Institute's applied research program and supervises graduate research assistants. Dr. Beecher is responsible for all aspects of institutional development, funding, marketing, and communications. She also serves as editor of the Institute's book series (MSU Press).

EDITOR-IN-CHIEF. *Utilities Policy*, Elsevier (2014 to present). Associate Editor (2013).

ADJUNCT APPOINTMENTS, MICHIGAN STATE UNIVERSITY. Department of Political Science (2003 to present), Economics (2006 to present), and College of Law (2005-2006).

PRINCIPAL, BEECHER POLICY RESEARCH, INC. (April 1998 to April 2002). Principal of an independent consulting firm with a mission to conduct high-quality policy research for the public and private sectors, provide practical public policy data and decision-making tools, and promote sound public policymaking processes and informed public policy choices. Conducted policy analysis, surveys, comparative studies, and social research related to public utilities, specializing in the structure and regulation of the water industry, water pricing and affordability, and integrated planning. Projects included research and consulting for the U.S. Environmental Protection Agency, the National Association of Water Companies, and the American Water Works Association Research Foundation. Advised and consulted with federal and state regulators and policymakers, professional associations, university researchers, consultants, utility managers, and others. Actively involved in national associations related to regulatory and water utility issues.

SENIOR RESEARCH SCIENTIST AND DIRECTOR OF REGULATORY STUDIES. Center for Urban Policy and the Environment, School of Public and Environmental Affairs, Indiana University, Indianapolis, Indiana (April 1995 to June 1998). Principal investigator and analyst for research related to the structure and regulation of the water utility industry. Responsible for the program's research agenda, funding and development, and survey and clearinghouse functions.

ADJUNCT PROFESSOR. School of Public and Environmental Affairs, Indiana University, Indianapolis, Indiana (Aug. 1995 to June 1998). Taught graduate and undergraduate courses in public policy, including a course on privatization. Special adjunct faculty appointment at Southern Illinois University for graduate student committee. Faculty of the Institute of Public Utilities, Michigan State for water programs.

SENIOR RESEARCH SPECIALIST. The National Regulatory Research Institute, The Ohio State University. Columbus, Ohio (Nov. 1988 to March 1995). Principal project manager and

regulatory analyst for water utility research; assisted in setting the research agenda, funding and grant development, and external relations; member of the staff subcommittee of the National Association of Regulatory Utility Commissioners (NARUC) Water Committee; liaison to state commissioners and staff, federal agencies, university faculty, professional associations, and others interested in water utility and regulatory issues; organizer and moderator for the Water Policy Forum at the Biennial Regulatory Information Conference; and instructor for new commissioner tutorial and other educational programs. Recipient of the 1991 Board of Directors award for excellence; honored by a NARUC resolution in 1995.

ADJUNCT ASSOCIATE PROFESSOR. School of Public Policy and Management, The Ohio State University. Columbus, Ohio (Feb. 1994 to April 1995). Taught two graduate-level public policy courses, served as a faculty and research advisor to graduate students; sat on graduate student committees; and participated in faculty colloquia.

EXECUTIVE ASSISTANT TO THE CHAIRMAN. Illinois Commerce Commission. Chicago, Illinois (Nov. 1983 to Oct. 1988). Principal policy analyst, project coordinator, and advisor to the Chairman on matters of administration, legislation, and regulatory policy affecting the electricity, gas, telecommunications, transportation, and water industries; Chairman's liaison to other commissioners, the executive director and division managers, state and federal agencies, the National Association of Regulatory Utility Commissioners, the media, and the general public; author of numerous policy memoranda and speeches.

ASSOCIATE INVESTIGATOR. Study of the Precision of Environmental Impact Assessment, funded by the National Science Foundation. Center for Urban Affairs & Policy Research, Northwestern University (1982 to 1983). Provided project management with primary responsibility for sample selection and coding, planned field research, interviewed knowledgeable informants and collected data, assisted in data management and statistical analysis, conducted investigation of policy implementation and non-implementation, and coauthored a book serving as the project's final report.

RESEARCH ASSOCIATE. Governmental Responses to Crime Project, funded by the National Institute of Justice. Center for Urban Affairs & Policy Research, Northwestern University (1980 to 1982). Interviewed knowledgeable informants, collected and managed data, and coauthored final report on political responses to crime in American cities.

RESEARCH ASSOCIATE. Wind Energy Research Project, funded by the Solar Energy Research Institute. Center for Urban Affairs & Policy Research, Northwestern University (1980). Designed and conducted field research and coauthored final research report.

RESEARCH ASSOCIATE. Illinois Sunset Review Project, funded by the Illinois General Assembly. Department of Political Science, University of Illinois at Chicago (1980). Researched federal impacts on state licensure and coauthored final report to the Illinois legislature.

TEACHING ASSISTANT. Department of Political Science, Northwestern University (1980). Courses in the American presidency and law and politics.

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EDUCATION

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PH.D. NORTHWESTERN UNIVERSITY. Political Science (Aug. 1986).

Fields: Public Policy (major), Political Behavior & Institutions, Law & Politics, Urban Politics.  
Dissertation: “Uncertain by Design: A Structural Theory of Regulation by the State  
Public Utility Commissions.”

M.A. NORTHWESTERN UNIVERSITY. Political Science (Aug. 1980).

M.A. Thesis: “When Governments Intervene: The Adoption of Regulatory Policy in the  
American States.”

B.A. ELMHURST COLLEGE. Economics, Political Science, and History (June 1979).

Graduated with highest honors.  
Phi Kappa Phi (the college's ranking scholastic honors society).

SCHOLARSHIPS

Northwestern University Scholarship (1982-1983).

Northwestern University, Center for Urban Affairs & Policy Research Fellowship  
(1981-1982 and 1980-1981).

Northwestern University Fellowship (1979-1980).

Elmhurst College Freshman Scholar (1977-1978).

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PUBLICATIONS

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“(Mis)classification of Water Systems in the United States: Implications, Analysis.” Working paper  
available on SSRN.

“A Universal Equity-Efficiency Model for Pricing Water,” *Water Economics and Policy*  
(forthcoming in 2020).

“The Unique and Evolving Role of Michigan’s Utility Consumer Participation Board (UCPB):  
Review and Recommendations,” Report to the Mott Foundation by the Institute of Public  
Utilities (April 2020).

“Developing an Interdisciplinary Science of Sustainability: What Can Be Learned from Water  
Systems?” Christine Brelsford, et al. (under revision, 2020).

“Does Regulation Fail or Do We Fail Regulation?” *Competition and Regulation in Network Industries*  
(Aug. 2019).

“Balancing Open Science and Data Privacy in the Water Sciences.” Samuel C. Zipper, et al. *Water  
Resources* (May 2019).

- “Infrastructure at an Inflection: Opportunity to Optimize Community Water Systems, International Joint Commission (March 2019).
- “Potential for Economic Regulation of Michigan’s Water Sector,” Policy Brief for the Incoming 2019 Gubernatorial Administration, Michigan State University Extension (Nov. 2018).
- “Pricing Wastewater to Save Water: Are Theory and Practice Transferable?” (with Tom Gould). *Utilities Policy* 52 (June 2018).
- “Institutional Perspective: The Role of Incentives in Public Utility Regulation,” *Incentives for Grid Modernization* (Lawrence Berkeley National Laboratory (June 2017).
- “The Flint Crisis,” Roundtable edited by M. McGuire, *Journal AWWA* (July 2016).
- Risk Principles for Public Utility Regulators* (with Steven G. Kihm). East Lansing: Michigan State University Press (2016).
- “Economic Regulation of Water Utilities: The US Framework,” in the *The Routledge Companion to Network Industries*. M. Finger and C. Jaag, eds. (2016).
- “Risk and Regulation in Water Utilities: A Cross-Country Comparison of Evidence from the CAPM,” (with Roger Buckland and Julian Williams). *Journal of Regulatory Economics* 47, 2 (April 2015): 117-145 (Nov. 2014).
- Building Better Water Rates for an Uncertain World: Balancing Revenue Management, Resource Efficiency, and Fiscal Sustainability* (with Thomas Chesnutt, et al.). Chicago: Alliance for Water Efficiency (2014).
- “Understanding Declining Water Sales and Utility Revenues” (with Thomas W. Chesnutt). *Metering International* (Issue 2, 2013).
- “Economic Regulation of Utility Infrastructure,” in proceedings of the 7<sup>th</sup> Annual Land Policy Conference: Infrastructure and Land Policies hosted by the Lincoln Institute of Land Policy (May 2013).
- “What Matters to Performance? Structural and Institutional Dimensions of Water Utility Governance,” *International Review of Applied Economics* (March 2013).
- “Structure, Regulation, and Pricing of Water in the United States Survey of the Great Lakes Region” (with Jason A. Kalmbach). *Utilities Policy* 24 (2013).
- “NARUC as Network: A Perspective on the U.S. Regulatory Policy Community,” *Competition and Regulation in Network Industries* (Dec. 2012).
- Declining Water Sales and Utility Revenues: A Framework for Understanding and Adapting* (with Thomas W. Chesnutt). Alliance for Water Efficiency and Johnson Foundation (Dec. 2012).

*A Balanced Approach to Water Conservation in Utility Planning* (Thomas W. Chesnutt, et al.). Water Research Foundation (March 2012).

“Climate Change and Energy” (with Jason A. Kalmbach). In *Midwest Technical Input Report*, Prepared for the U.S. National Climate Assessment. Submitted, Julie Winkler, Jeff Andresen, and Jerry Hatfield, Report Coordinators (March 2012). Published by Island Press (2014).

“The Ironic Economics and Equity of Water-Budget Rates,” *Journal American Water Works Association* (Feb. 2012).

*Primer on Water Pricing*. Institute of Public Utilities, Michigan State University (Nov. 2011).

Efficiency-Oriented Water Pricing: It's the Right Thing to Do” (et al.). *Environmental & Water Resources Institute Currents* (ASCE) 13:2 (Spring 2011).

“Public Utility Regulation,” in *Governing America* by Paul Quirk & William Cunion. Facts on File (2011).

*Water Pricing Primer for the Great Lakes Region*. Chicago: Alliance for Water Efficiency (Dec. 2010). A project of the Value of Great Lakes Water Initiative of the Great Lakes Commission (funded by the Great Lakes Protection Fund),16 pages.

*2010 Great Lakes Water Rate Survey* (with Jason A. Kalmbach). Ann Arbor: Great Lakes Commission (Feb. 1, 2011). A project of the Value of Great Lakes Water Initiative of the Great Lakes Commission (funded by a grant from the Great Lakes Protection Fund), 36 pages.

“Why Public Utilities Should Ignore Externalities.” U.S. Association for Energy Economics *Dialogue* 19:1 (2011).

“The Conservation Conundrum: How Declining Demand Affects Water Utilities.” *Journal American Water Works Association* (Feb. 2010).

“Private Water and Economic Regulation in the United States,” in *Handbook Utility Management* (Springer, 2009).

“The Prudent Regulator: Politics, Independence, Ethics, and the Public Interest.” *Energy Law Journal* 29: 2 (Nov. 2008).

“Water Efficiency Programs for Integrated Water Management” (Thomas W. Chesnutt, et al.). *American Water Works Association Journal* (May 2008).

*Water Efficiency Programs for Integrated Water Management* (Thomas W. Chesnutt, et al.). Denver, CO: American Water Works Research Foundation (2007), 225 pages.

- Sourcebook of Regulatory Techniques for Water Utilities*. Washington, DC: National Association of Water Companies (1997, 1999, 2003, and 2006 editions). Electronic database.
- Utility Rate Structures; Investigating International Principles and Customer Views* (Hudson Bell, et al.). Denver, CO: American Water Works Research Foundation (2005).
- “Thinking Outside the Bill: A Utility Manager’s Guide to Assisting Low-Income Water Customers” by Scott Rubin, et al. (project team member). Denver, CO: American Water Works Association (2004).
- Technical Briefs for the Ad Hoc Committee on Critical Infrastructure*. National Association of Regulatory Utility Commissioners (2004).
- “Information Handbook for Preparing a Water System Management Plan: Requirements for Proposed New Community and Nontransient Noncommunity Water Systems.” Handbook prepared for the Office of Water Quality, Indiana Department of Environmental Management (Sept. 2003), 52 pages.
- “Achieving Sustainable Water Systems,” in *Drinking Water Regulations and Health*. Fred Pontius, ed. New York: John Wiley and Sons (2003).
- Economic Regulation of Public Utilities: An Introduction and Overview*. Institute of Public Utilities, Michigan State University (Feb. 2003).
- Privatization of Water Services in the United States*. Authored by the Committee on Privatization of Water Services in the United States. Washington, DC: National Research Council, National Academy of Sciences (2002), 145 pages.
- “Commissions on a Mission: The Emergent Regulatory Paradigm.” *LEAP Letter* (Sept.-Oct., 2002).
- “Strategic Planning for Small Water Systems” (Peter E. Shanaghan and Janice A. Beecher) in *Urban Water Supply Handbook*. Larry W. Mays, ed. New York: McGraw-Hill (2002).
- “The Infrastructure Gap: Myth, Reality, and Strategies,” in *Assessing the Future: Water Utility Infrastructure Management*. Denver, CO: American Water Works Association (2002).
- Economic Regulation of Water Utilities: A Primer*. Washington, DC: National Association of Water Companies (2001), 36 pages.
- Value, Structure, and Regulation: Select Issues Affecting the Water Industry*. Pre-Conference Discussion Paper for the 2002 National Drinking Water Symposium. Washington, DC: National Association of Water Companies (2001).

“Privatization, Monopoly, and Structured Competition in the Water Industry: Is there a Role for Regulation,” in *Excellence in Action: Water Utility Management in the 21<sup>st</sup> Century*. Denver, CO: American Water Works Association (2001).

“The Ethics of Water Privatization,” in *Navigating Rough Waters: Ethical Issues in the Water Industry*. Cheryl Davis, ed. Denver, CO: American Water Works Association (2001).

“A Dozen Mega-Trends in the Water Sector.” *Utility Business* (Oct. 2001).

“Institutional Alternatives for the 21st Century” (Peter E. Shanaghan and Janice A. Beecher). *Proceedings of the Annual Conference of the American Water Works Association*. Denver, CO: American Water Works Association (2001).

“Survey of State Agency Water Loss Reporting Practices: Preliminary Findings” (George Kunkel and Janice A. Beecher). *Proceedings of the Annual Conference of the American Water Works Association*. Denver, CO: American Water Works Association (2001).

“Ten Practices of Highly Effective Water Utilities” (with Scott J. Rubin). *Opflow* (April 2001).

“Strategic Compliance Planning for Small Systems” (Peter Shanaghan and Janice A. Beecher). *Opflow* (Jan. 2001).

*The Changing Utility Environment: Impact on the Water Industry and Issues for Economic Regulators*. Discussion Paper and Summary Report for the 2000 NAWC Water Policy Forum. Washington, DC: National Association of Water Companies (2000).

*Deregulation! Impacts on the Water Industry* (with Scott J. Rubin). Denver, CO: American Water Works Research Foundation (2000), 299 pages.

*Socioeconomic Impacts of Water Conservation* (with Thomas W. Chesnutt and David M. Pekelney). Denver, CO: American Water Works Research Foundation (2000), 188 pages.

“The Rationale for Regulating Municipal Contract Services.” *Public Works Financing* (Nov. 2000).

“Privatization, Monopoly, and Structured Competition in the Water Industry: Is There A Role For Regulation?” *Water Resources Update* (Oct. 2000).

*Report of the National Drinking Water Advisory Council (NDWAC) Small Systems Implementation Working Group* (Beecher Policy Research, Inc. and The Cadmus Group, Inc.). U.S. Environmental Protection Agency (Summer 2000).

“Impacts of Deregulation on the Water Industry” (with Scott J. Rubin). *Proceedings of the Annual Conference of the American Water Works Association*. Denver, CO: American Water Works Association (2000).

“Implications of Deregulation.” *American Water Works Association Journal* (Jan. 2000).

*Consolidated Water Rates: Issues and Practices in Single-Tariff Pricing*. Washington, DC: U.S. Environmental Protection Agency (Dec. 1999), 110 pages.

*Regulatory Incentives for Consolidation: The Public Utility Commission Role in Restructuring the Water Industry*. Discussion Paper and Summary Report for the 1999 NAWC Water Policy Forum. Washington, DC: National Association of Water Companies (1999).

“The Role of Utility Regulation in Water and Wastewater Privatization.” *America’s Water and Wastewater Industries: Competition and Privatization*. Paul Seidenstadt, Michael Nadol, and Simon Hakim, eds. Arlington, VA: Public Utilities Reports (1999).

“Sustainable Water Pricing” (with Peter E. Shanaghan). *Journal of Contemporary Water Research and Education (Water Resources Update)* (Winter 1999).

“Privatization, Monopoly, and Structured Competition in the Water Industry: Is There A Role For Regulation?” *Proceedings of the Annual Conference of the American Water Works Association*. Denver, CO: American Water Works Association (1999).

“Sustainable Water Pricing” (with Peter E. Shanaghan). *Proceedings of the Annual Conference of the American Water Works Association*. Denver, CO: American Water Works Association (1999).

“Water Accountability and The EPA Water Conservation Plan Guidelines” (with John E. Flowers). *Proceedings of the Annual Conference of the American Water Works Association*. Denver, CO: American Water Works Association (1999).

“Equity, Fairness, and Conservation Rates” (Patrick C. Mann and Janice A. Beecher). *Proceedings of Conserv99*. Denver, CO: American Water Works Association (1999).

“EPA’s Planning Guidelines: Raising the Bar” (John E. Flowers and Janice A. Beecher). *Proceedings of Conserv99*. Denver, CO: American Water Works Association (1999).

*Water Conservation Plan Guidelines*. Prepared for the Environmental Protection Agency pursuant to the 1996 Amendments to the Safe Drinking Water Act (Aug. 1998).

*The Water Industry Compared: Structural, Regulatory, and Strategic Issues for Utilities in a Changing Context*. A report prepared for the National Association of Water Companies. Washington, DC: NAWC (1998).

*National-Level Affordability Criteria under the 1996 Amendments to the Safe Drinking Water Act* (International Consultants, Inc., Hagler Bailly Services, Inc. and Janice A. Beecher). A Report to the Office of Groundwater and Drinking Water, U.S. Environmental Protection Agency (1998).



- “The 1996 Safe Drinking Water Act and Structural Change in the Water Industry.” *Proceedings of the Annual Conference of the American Water Works Association*. Denver, CO: American Water Works Association (1998).
- “Efficiency and Profitability: Conservation Incentives for Investor-Owned Utilities” (with Thomas W. Chesnutt and Patrick C. Mann). *Proceedings of the Annual Conference of the American Water Works Association*. Denver, CO: American Water Works Association (1998).
- “Implementing Water Conservation Rates” (with Thomas W. Chesnutt). *Proceedings of the Annual Conference of the American Water Works Association*. Denver, CO: American Water Works Association (1998).
- “Affordability Provisions of the 1996 SDWA” (with Ian P. Kline). *Proceedings of the Annual Conference of the American Water Works Association*. Denver, CO: American Water Works Association (1998).
- “Affordability and Drinking Water: Provisions of the 1996 SDWA” (with Peter Shanaghan). *American Water Works Association Journal* (May 1998).
- “Water Conservation and the 1996 SDWA” (with John D. Flowers). *American Water Works Association Journal* (May 1998).
- “Small System Capacity and the 1996 SDWA” (Peter Shanaghan, Ian Kline, John Cromwell, and Janice A. Beecher). *American Water Works Association Journal* (May 1998).
- “Energy Deregulation” (et al.). AWWA Roundtable. *American Water Works Association Journal* (April 1998).
- “Conservation Rates in the Real World” (Thomas W. Chesnutt and Janice A. Beecher). *American Water Works Association Journal* 90: 2 (Feb. 1998). Divisional best paper award.
- “Twenty-One Myths About Privatization (and Counting).” *NAWC Water* 38, 3 (1998).
- “The Role of Demand Management in Integrated Resource Planning,” in *Urban Water Demand Management and Planning*. Duane D. Baumann, John J. Boland, and W. Michael Hanemann, eds., New York: McGraw Hill (1998).
- Customer-Focused Service: Responsiveness and Change in the Water Industry*. Discussion Paper and Summary Report for the 1997 NAWC Water Policy Forum. Indianapolis, IN: Center for Urban Policy and the Environment (1997).
- “Real Water Rates on the Rise” (with Patrick C. Mann). *Public Utilities Fortnightly* (July 1997).
- “To Privatize or Not to Privatize” (G. Richard Dreese and Janice A. Beecher). *Indian Water Works Association* (July 1997).

- “United States: Water,” in *Utility Regulation 1997*. London: Privatization International (1997).
- “Water Utility Privatization and Regulation: Lessons from the Global Experiment.” *Water International* (March 1997).
- The Regionalization of Water Utilities: Perspectives, Issues, and Annotated Bibliography*. Columbus, OH: The National Regulatory Research Institute (1996), 149 pages.
- Handbook for Designing, Evaluating, and Implementing Conservation Rate Structures* (Thomas W. Chesnutt, et al.). Los Angeles, CA: The California Urban Water Conservation Council (1996).
- Discussion Paper for the 1996 NAWC Water Policy Forum. Prepared for the National Association of Water Companies (NAWC). Indianapolis, IN: Center for Urban Policy and the Environment (1996).
- “Avoided Cost: An Essential Concept for Integrated Resource Planning.” *Water Resources Update* 104 (Summer 1996). Also served as Issue Editor.
- “Putting the Pieces Together: Integrating Water Resources in IRP” (Thomas W. Chesnutt, Casey McSpadden, and Janice A. Beecher). *Proceedings of the Annual Conference of the American Water Works Association*. Denver, CO: American Water Works Association (1996).
- "Incremental and Average Cost Methods in Rate Design" (Patrick C. Mann and Janice A. Beecher). *American Water Works Association Journal* 88: 6 (June 1996).
- "The Role of Price in Water Conservation: Evidence and Issues" (with Patrick C. Mann). *Proceedings of Conserv96*. Denver, CO: American Water Works Association (1996).
- "Handbook for Designing, Evaluating, and Implementing Conservation Rates" (Thomas W. Chesnutt, et al.). *Proceedings of Conserv96*. Denver, CO: American Water Works Association (1996).
- "Public-Private Partnerships for Providing Water Service" (et al.). AWWA Roundtable. *American Water Works Association Journal* 88: 4 (April 1996).
- Study Guide* to accompany Karen O'Connor and Larry Sabato's *American Government: Roots and Reform*. New York: Macmillan, 1993, 1995, and 1996 editions. *Instructor's Manual and Test Bank* (1993 ed.).
- 1995 Inventory of Commission-Regulated Water and Wastewater Utilities*. Indianapolis, IN: Center for Urban Policy and the Environment (1995).
- Discussion Paper for the 1995 NAWC Water Policy Forum*. Prepared for the National Association of Water Companies (NAWC). Indianapolis, IN: Center for Urban Policy and the Environment (1995).

*Survey of Eastern Water Law* (Paul G. Foran, Janice A. Beecher, and Larry J. Wilson). A Report to the Illinois Department of Natural Resources (1995), 112 pages.

*Regulatory Implications of Water and Wastewater Utility Privatization* (with G. Richard Dreese, and John D. Stanford). Columbus, OH: The National Regulatory Research Institute (1995), 271 pages.

*Alternatives to Utility Service Disconnection* (Robert E. Burns, et al.) Columbus, OH: The National Regulatory Research Institute (1995), 168 pages.

"Integrated Resource Planning Fundamentals." *American Water Works Association Journal* 87: 6 (June 1995). Selected as the best 1995 Journal article by the AWWA Water Resources Division.

"PUC 2000: The Water Utility Industry." *NAWC Water* (Summer 1995).

"Regulatory Alternatives for Water Utilities: A Comprehensive Framework." *National Regulatory Research Institute Quarterly Bulletin* 16, 1 (March 1995): 103-119.

*Revenue Effects of Water Conservation and Conservation Pricing: Issues and Practices* (et al.). Columbus, OH: The National Regulatory Research Institute (Sept. 1994), 241 pages.

"Water Affordability and Alternatives to Service Disconnection." *American Water Works Association Journal* 86: 10 (Oct. 1994): 61-72.

"NRRI Survey on Water Conservation and Conservation Pricing." *Proceedings of the NRRI Biennial Regulatory Information Conference*. Columbus, OH: The National Regulatory Research Institute (Sept. 1994).

"Financial Distress Assessment Models for Small Water Utilities" (G. Richard Dreese and Janice A. Beecher). *Proceedings of the Annual Conference of the American Water Works Association*. Denver, CO: American Water Works Association (1994).

*Meeting Water Utility Revenue Requirements: Financing and Ratemaking Alternatives* (with Patrick C. Mann). Columbus, OH: The National Regulatory Research Institute (Nov. 1993), 271 pages.

"IRP: An Open Planning Process" (et al.). AWWA Roundtable. *American Water Works Association Journal* 85: 8 (Aug. 1993): 26-34.

"Developing Models for Assessing the Financial Health of Small and Medium-Size Water Utilities" (G. Richard Dreese and Janice A. Beecher). *American Water Works Association Journal* 85: 6 (June 1993): 54-60.

*Test Bank* to accompany *Empty Dreams, Empty Pockets*. New York, Macmillan (1993).

"Financial Distress Assessment Models for Small Water Utilities" (G. Richard Dreese and Janice A. Beecher). *Proceedings of the NRRI Biennial Regulatory Information Conference*. Columbus, OH: The National Regulatory Research Institute (Sept. 1992).

"Enhanced Regulatory Decisionmaking Through Integrated Water Resource Planning." *Proceedings of the NRRI Biennial Regulatory Information Conference*. Columbus, OH: The National Regulatory Research Institute (Sept. 1992).

*Viability Policies and Assessment Methods for Small Water Utilities* (with G. Richard Dreese). Columbus, OH: The National Regulatory Research Institute (June 1992), 276 pages.

*1992 NRRI Survey on Commission Ratemaking Practices for Water Utilities* (with Nancy N. Zearfoss). Columbus, OH: The National Regulatory Research Institute (May 1992), 71 pages.

*Integrated Resource Planning for Water Utilities* (with James R. Landers, and Patrick C. Mann). Columbus, OH: The National Regulatory Research Institute (Oct. 1991), 303 pages.

*Cost Allocation and Rate Design for Water Utilities* (with Patrick C. Mann). Columbus, OH: The National Regulatory Research Institute (Dec. 1990), 210 pages. Also published by the American Water Works Association Research Foundation (1990).

"Marginal Cost Pricing Theory Applied to Water Utilities" (Patrick C. Mann and Janice A. Beecher). *Proceedings of the NRRI Biennial Regulatory Information Conference*. Columbus, OH: The National Regulatory Research Institute (Sept. 1990).

"Value, Cost, and Price: Essay on Emerging Water Utility Issues." *National Regulatory Research Institute Quarterly Bulletin* (June 1990). Also published in *NAWWC Water* (Summer 1990).

*Deregulation and Regulatory Alternatives for Water Utilities* (with Patrick C. Mann). Columbus, OH: The National Regulatory Research Institute (March 1990), 125 pages.

*Compendium on Water Supply and Conservation* (with Ann P. Laubach). Columbus, OH: The National Regulatory Research Institute (Oct. 1989), 388 pages.

*Study Guide* to accompany Robert L. Lineberry's *Government in America*. Boston: Scott, Foresman/Little, Brown (1983, 1986 and 1989 editions).

"Applied Political Science: Bridging the Gap or a Bridge Too Far?" (Gary J. Andres and Janice A. Beecher). *PS: Political Science & Politics* (Sept. 1989).

*1989 Survey on State Commission Regulation of Water and Sewer Systems* (with Ann. P. Laubach). Columbus, OH: The National Regulatory Research Institute (May 1989).

*Cost Impact of Safe Drinking Water Act Compliance for Commission-Regulated Water Utilities* (Patrick C. Mann and Janice A. Beecher). Columbus, OH: The National Regulatory Research Institute (May 1989), 97 pages.

*Forecasts and Environmental Decisionmaking: The Content and Predictive Accuracy of Environmental Impact Statements* (Paul J. Culhane, H. Paul Friesema, and Janice A. Beecher). Boulder, CO: Westview Press (1987), 306 pages.

*Instructor's Manual* to accompany Robert L. Lineberry's *Government in America* (et al.) Boston: Little, Brown (1986 ed.).

*The Precision of Environmental Impact Assessment: Implementation Status and Sample Selection* (Paul J. Culhane, H. Paul Friesema, and Janice A. Beecher). CUAPR Working Paper Series. Evanston, IL: Center for Urban Affairs & Policy Research (Sept. 1982).

"Keeping Pace: Court Resources and Crime in Ten U.S. Cities" (Herbert Jacob, Dwayne Swank, Michael J. Rich, and Janice A. Beecher). *Judicature* 66 (Aug. 1982): 73-83.

"Attentiveness to Crime in Political Arenas" (with Robert L. Lineberry), in *Crime on Urban Agendas*, Herbert Jacob, Robert L. Lineberry, et al. Report of the Governmental Responses to Crime Project, Northwestern University. Washington, DC: National Institute of Justice (1982).

"Community Power, the Urban Agenda, and Crime Policy" (with Robert L. Lineberry and Michael J. Rich) *Social Science Quarterly* 2 (Dec. 1981).

"The Politics of Police Responses to Urban Crime" (with Robert L. Lineberry and Michael J. Rich), in *Reactions to Crime*, Dan A. Lewis, ed., Beverly Hills: Sage (1981).

*Blowing in the Wind: The Prospects of Utility Adoption of Wind Energy Systems* (H. Paul Friesema, Janice A. Beecher, and Cleveland Fraser). Report to the Solar Energy Institute. Indianapolis, IN: The Institute of Ecology (1980).

"Federal Impacts on State Occupational Licensure," in Charles Williams, et al., *Illinois Sunset Review Project: Final Report*. Chicago: University of Illinois (1980).

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## PAPERS

IPU Research Notes and Resource Pages. Resources on regulatory commission structure and jurisdiction, commissioner demographics, trends in consumer prices and expenditures, core case law in regulation, reading lists and bibliographies, and resources on regulation and special topics.

"Economic Regulation of Utility Infrastructure," Invited paper at the Lincoln Institute of Land Policy's 7<sup>th</sup> Annual Land Policy Conference on Infrastructure and Land Policies in Cambridge, MA (June 4-5, 2012).

- “Rhetoric of Regulation: How U.S. Public Service Commissions Define Their Mission.” Paper at the European Consortium for Political Research Conference on Regulation in the Age of Crisis, Dublin, Ireland (June 2010).
- “Regulatory Independence and Regulatory Networks in the U.S. Experience.” Paper at the European Consortium for Political Research Conference on Regulation in the Age of Crisis, Dublin, Ireland (June 2010).
- “Does Regulation Fail or Do We Fail Regulation? The Paradox of Imperfection.” Paper at the 2<sup>nd</sup> Annual Conference on Competition and Regulation in Network Industries in Brussels, Belgium (Nov. 20, 2009).
- “Investor Ownership of Water Utilities: Evidence from Indiana.” Research report prepared for the American Water Works Company, Inc. (proprietary, 2001).
- “Handbook on Strategic Planning for Small Water Systems.” Working paper for the Environmental Protection Agency (2001).
- “Case Studies in Water Conservation.” Working paper for the Environmental Protection Agency (2000).
- “Assistance to Disadvantaged Communities in the Drinking Water State Revolving Loan Fund (DWSRF).” Working paper for the Environmental Protection Agency (2000).
- “Economic Framework for Assessing Small System Compliance Options.” Working paper for the Environmental Protection Agency (Sept. 1999).
- “Sustainable Water Pricing: A Long-Term Capacity- Development Strategy.” Working Paper for the Environmental Protection Agency (Sept. 1999).
- “Privatization, Monopoly, and Structured Competition in The Water Industry: Is There A Role For Regulation?” Paper at the Americana Environmental Conference in Montreal (March 1999); the Annual Conference of the American Water Works Association in Chicago (June 1999); and the Annual Conference of the University Council of Water Resources in Kona, HI (June 1999).
- “Water and Wastewater Utility Privatization: A Global Perspective.” Paper at a conference of the Institute for Global Climate Change, Indiana University in Bloomington, IN (March 1996).
- “Institutional Roles and Responsibilities for Integrated Water Resource Planning: Discussion Paper.” Prepared for the Water Industry Technical Action Fund (WITAF) and presented at the Annual Conference of the American Water Works Association in San Antonio, TX (June 1993).
- “Integrated Water Resource Planning: Discussion Paper.” Prepared for the Water Industry Technical Action Fund (Feb. 1993).

"Economic and Regulatory Impacts of the Safe Drinking Water Act." Paper at the New England Conference of Public Utility Commissioners (May 1992).

"The Cost and Rate Impact of the Safe Drinking Water Act" (with Patrick C. Mann). Paper at the Iowa State Regulatory Conference in Ames, Iowa (May 1990).

"Value, Cost, and Price: Essay on Emerging Water Utility Issues." Paper at the Symposium on International and Transboundary Water Resources Issues in Toronto, Ontario (April 1990).

"Agricultural Energy Consumption and Conservation in Illinois: An Overview." Research paper prepared for the Illinois Commerce Commission (Oct. 1984).

"Utility Taxation and Consumer Costs in Illinois: A Statistical Report." Research paper prepared for the Illinois Commerce Commission (May 1984).

"Crime in the Cities: Politics and Policy Over a Generation" (with Robert L. Lineberry, and Michael J. Rich). Paper delivered at the Annual Meeting of the Midwest Political Science Association in Cincinnati, OH (April 1981).

"The Unclear Connection Between the Scientific Quality of Environmental Impact Statements and Public Policy: Experience in the USA" (H. Paul Friesema with Janice A. Beecher). Paper delivered by H. Paul Friesema at the International Seminar on the Role of Environmental Assessment in the Decisionmaking Process in Heidelberg, Federal Republic of Germany (Aug. 1987).

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## PRESENTATIONS

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"Governance, Economics, and Policy at the State and Federal Levels," National Academies of Science, Washington, DC (Nov. 2019).

"Water Utilities: Structure, Regulation, Pricing, and Affordability," Webinar for International Governance of Large Urban Systems (Nov. 2019).

"Water in the Public Trust: The Role of Utilities and Regulators," New England Conference of Public Utilities Commissioners, Hartford, CT (June 2019).

"Water Pricing and Affordability," Michigan American Water Works Association, Traverse City, MI (Sept. 2019), Michigan Water Environment Federation, Frankenmuth, MI (Jan. 2019), and Michigan Environmental Council (Dec. 2018).

"Water as an Interdisciplinary Imperative," Keynote address, Water and Environment Student Talks, Vancouver, BC (June 2019).

- “Affordability, Equity, and Financial Sustainability, Blue Cities Fishbowl, Canadian Water Network, Toronto, ON (May 2019).
- “Water Utility Acquisitions: Is Fair Market Value Fair?” Indiana Energy Bar Association, Indianapolis, IN (April 2019) and National Association of State Utility Consumer Advocates, Orlando, FL (Nov. 2018).
- “Utility Affordability,” Society of Environmental Journalists and U.S. conference of Mayors Water Council Meeting, Flint, MI (Oct. 2018).
- “Regulatory Governance and Performance,” Panel at the World Forum on Energy Regulation Cancun, Mexico (June 2018).
- “Infrastructure at an Inflection: A New Paradigm for the Transformation of Urban Water Systems” Annual Conference on Competition and Regulation in Network Industries in Florence, Italy (June 2017).
- “The Flint Effect,” Regional regulatory meetings in San Diego, CA; Portland, OR; Anchorage, AK; and Bretton Woods, NH (May and June 2017).
- “Institutional Perspective: The Role of Incentives in Public Utility Regulation,” National Conference of Regulatory Attorneys, Portland, OR (May 2017).
- “Revenue Requirements and Pricing for Sustainable Water Services,” Congrès INFRA 2016, Montreal (Nov. 2016).
- “Flint Water Crisis: A Regulatory Perspective,” Public Health Law Conference, Washington, DC (Sept. 2016).
- “Institutions and Infrastructure: What’s Hot, What’s Not (But Should Be),” Keynote address, Annual Conference of the Australian Competition and Consumer Commission, Sydney, Australia (Aug. 2016).
- “Utilities, Networks, and the Regulatory Compact: An Institutional Perspective,” Annual Conference of the Australian Competition and Consumer Commission, Sydney, Australia (Aug. 2016).
- “Failing Flint: An Institutional Analysis of the Water Crisis,” National Association of Regulatory Utility Commissioners Summer Meeting, Nashville, TN (July 2016).
- “The Social Dimension of Public Utility Networks: Revisiting Theoretical and Practical Fundamentals,” Annual Conference on Competition and Regulation in Network Industries in Delft, Netherlands (Nov. 2015).



- “Ratemaking Alternatives and Risk,” National Association of Utility Consumer Advocates in Austin, TX (Nov. 2015).
- “Policy Implications of Falling Water Usage,” Mid-America Regulatory Conference in Milwaukee, WI (June 2015).
- “Regulatory Impact: Measurement and Importance,” World Energy Regulatory Forum, Istanbul, Turkey (June 2015).
- “Household Expenditures, Prices, and Rate Design for Utility Services: Trends and Distributional Effects,” 2014 Financial Forum of the Society of Utility and Regulatory Financial Analysts, Indianapolis, IN (April 2015).
- “Economic Regulation: An Institutional Perspective,” Midwest meeting of the National Association of State Energy Offices, Columbus, OH (April 2015).
- “Selling Truth to Power: Maintaining Academic Integrity in Sponsored Engagement,” MSU Conference on Neoliberalism in Higher Education (March 2015).
- “How Low Can It Go? Implications of Falling Usage for Water Utilities,” NARUC Annual Meeting, Dallas, TX (Nov. 2014).
- “NARUC Workforce Panel: An Educator Perspective,” NARUC Annual Meeting, Dallas, TX (Nov. 2014).
- “Water in the U.S.: Industry Structure, Regulation, and Pricing,” Turin School of Local Regulation, Turin, Italy (Sept. 2014).
- “Implications of Falling Usage for Water Utilities,” Detroit Water Technical Advisory Committee (July 2014).
- “Theoretical Underpinnings of the Regulatory Compact,” Annual National Conference of Regulatory Attorneys, Columbus, OH (June 2014).
- “Revisiting the Regulatory Compact,” 2014 Financial Forum of the Society of Utility and Regulatory Financial Analysts, Indianapolis, IN (April 2014).
- “Rising Prices and Falling Demand: Can Water Find a New Equilibrium?” AWE Water Rates Summit at Wingspread, WI (April 2014).
- “Risk Principles for Regulators,” SEARUC Commissioners Retreat in Charlotte, NC (April 2014).
- “Risk Principles for Regulators,” 2014 Spring Meeting of the NARUC Staff Subcommittee on Accounting and Finance, Jacksonville, FL (March 2014).

“Can Water Defy Jevons Paradox? Findings and Implications for Sustainability Utility Systems,” Annual Conference on Competition and Regulation in Network Industries in Brussels, Belgium (Nov. 2013).

“Income Consideration in Ratemaking for Utility Water Service, AWWA Water Utility Council, Denver, CO (Sept. 2013).

“Utility Business Models: An Institutional Perspective,” National Association of Regulatory Utility Commissioners Summer Meeting, Dallas, TX (July 2013).

“Evaluating Infrastructure Investments: An Economic Regulatory Perspective,” *Infrastructure: The Cost of Doing Nothing*, Government-University-Industry Research Roundtable (GUIRR) at the The National Academies, Washington, DC (June 2013).

“Adaptive Regulation,” Annual National Conference of Regulatory Attorneys, San Francisco, CA (June 2013).

“Water Demand in the US: Some Myths, Realities, and Propositions,” Urban Water Demand Roundtable, Arizona State University, Tempe, Arizona (April 2013).

“Regulation of the U.S. Water Industry.” For the Water Services Regulatory Commission of Mongolia in Washington, DC (Jan. 2013).

“Distributional Implications of Utility Price and Expenditure Trends in the United States: A Descriptive Analysis,” Annual Conference on Competition and Regulation in Network Industries in Brussels, Belgium (Nov. 2012).

“Risk and the Regulatory Compact: Some Principled Propositions,” Annual Meeting of the National Association of Regulatory Utility Commissioners (Nov. 2012).

“Declining Water Sales and Utility Revenues,” National Water Rates Summit hosted by the Johnson Foundation at Wingspread (Aug. 2012).

“Beyond Public v. Private: The Relevance of Institutions to Utility Performance,” Nanyang Technological University and Michigan State University International Conference on The Economics and Policy of Water and the Environment in Singapore (June 2012).

“A New Business Model for Water Utilities,” Invited panelist at the Annual Meeting of the American Water Works Association in Dallas, TX (June 2012).

“Beyond the Conservation Conundrum,” California Water Association in Sacramento, CA (June 2012).

“Introduction to Public Utility Regulation,” National Governors’ Association Governors’ Energy Advisors Policy Institute (May 2012).

“Ethics for Regulators,” Commissioners Meeting, Southeastern Association of Regulatory Utility Commissioners (April 2012).

“Saving our Water: Pricing,” Television appearance on *The Agenda with Steve Paikin* (March 2012).

“Economics and Governance Structure,” EPA’s Retooling Infrastructure Workshop in Detroit, MI (April 2012).

“Recessions, Rates, and Revenues: the Water Agency Dilemma,” California Irrigation Institute’s 50<sup>th</sup> Annual Conference in Sacramento, CA (Jan. 2012).

“Demand, Price, and Sustainability,” Regional Workshop On Supply Economics and Rates in Bellevue, Washington (Nov. 2011).

“Sustainable Water Systems: Beyond Political Correctness and Fuzzy Economics,” Keynote address at the 2011 AWWA Conservation Symposium in Orlando, Florida (March 2011) and Water@Wayne, Wayne State University in Detroit, MI (Oct. 2011).

“Water Pricing and Sustainability: 2010 Great Lakes Water Rate Survey” (with Jason A. Kalmbach) at the Sixth Biennial Conference of the U.S. Society of Ecological Economists in East Lansing, MI (June 2011).

“Best of Both Worlds: The Role of Economic Regulation in Ensuring Utility Performance.” Quality of Institutions and the Performance of Public Service Providers, Tenth Milan European Economy Workshop, University of Milan, Italy (by invitation, June 2011).

“*Smart Grid Regulators.*” Smart Grid Symposium hosted by the Michigan Public Service Commission and the Institute of Public Utilities, in Dearborn, MI (May 2011).

“Declining Water Demand.” National Association of Water Companies Winter Leadership Meeting, San Antonio, Texas (by invitation, March 2011).

“Understanding Water Demand.” IPU’s Forecasting Workshop in Charleston, SC (March 2011).

“Structure and Regulation of the U.S. Water Industry.” For the Egyptian Minister of Housing in Washington, DC (by invitation, Oct. 2010 and April 2004).

“Efficiency, Equity, And Sustainability: The Role of Multi-Objective Water Rates.” Annual Conference of the National Association of Regulatory Utility Commissioners in Chicago, IL (Nov. 2009).

“Water: Institutional Options, Sustainability, and Regulation.” First International Forum on the Water Sector and National Competitiveness sponsored by the Instituto Mexicano de Tecnología del Agua and USAID in Mexico City (by invitation, Sept. 2009).

- “Water System Sustainability.” Mid-America Regulatory Conference in Traverse City, MI (June 2009).
- “Michigan's Critical Infrastructure: Water and Sewer System Concerns.” Michigan State University’s Institute for Public Policy and Social Research Policy Forum (March 2009).
- “Water and Energy.” IPU’s Michigan Forum on Economic Regulatory Issues in East Lansing, MI (Jan. 2009).
- “The U.S. Water Industry: Structure, Regulation, and Pricing.” 1<sup>st</sup> International Forum on Regulation of Water Services and Sustainability in Rome, Italy (by invitation, Jan. 2009).
- “Incentives, Decoupling, and Alternatives.” IPU’s Advanced Regulatory Studies Program in East Lansing, MI (Oct. 2008).
- “Utility Infrastructure.” Michigan State University’s Institute for Public Policy and Social Research Policy Forum (May 2008).
- “Regulation the Public Interest Imperative.” Public Utility Law Subcommittee, Administrative Law Section of the State Bar of Michigan, Luncheon at Michigan State University (May 2008).
- “Climate Change, Utilities, and Economic Regulation: Understanding Markets, Efficiency, Incentives, and Policy Impacts.” Climate Change in the Great Lakes Region, Michigan State University (April 2008).
- “Introduction to Utility Rates.” Meeting of the Michigan Chapter of the International Rights of Way Association in Mount Pleasant, MI (April 2008).
- “Regulation as Social Compact” and “Full-Cost Pricing.” 2007 National Drinking Water Symposium in LaJolla, CA (Oct. 2007).
- “Why We Regulate: A Primer. Opening address at the 30<sup>th</sup> Annual Conference of Regulatory Attorneys in Bismarck, ND (June 4-5, 2007). Also, “How Water Compares” (panel).
- “Economic Regulation and Full-Cost Pricing.” Facilitator and panelist at the U.S. EPA Sustainable Infrastructure Forum in Groton, CT (April-May 2007).
- “Issues in Utility Regulation.” Meeting of the Michigan Chapter of the International Rights of Way Association in Ann Arbor, MI (March 2007).
- “Optimizing Critical Infrastructure Investment.” Annual Meeting of the National Association of Regulatory Utility Commissioners in Miami, FL (Nov. 2006).

- “Utility Industries Compared” and “Institutional Options.” EPA Full-Cost Water Pricing Workshop, Michigan State University (Nov. 2006).
- “Avoided Cost Analysis in Integrated Planning for Water Efficiency: Concepts, Controversies, and Guidelines” and “Water Efficiency Programs for Integrated Water Management” (T.W. Chesnutt, G. Fiske, J.A. Beecher, and D.M. Pekelney), at the International Water Association Conference in Santiago, Chile (March 2005).
- “The Tragedy of Common Benefits: Implementing Regional Conservation Anyway” (T.W. Chesnutt and J.A. Beecher), at the American Water Works Association Water Sources Conference (Jan. 2004).
- “Regulatory Independence and Ethics.” Annual Meeting of the Southeastern Association of Regulatory Utility Commissioners in Covington, KY (June 2005).
- “Ethics and Development: The Practical Case of Public Utilities, Privatization, and Regulation.” Conference and Workshop on Ethics and Development: The Capability Approach in Practice, Michigan State University (April 2005).
- “The Role of Economic Regulation in Institutional Capacity Development.” CSIS Workshop on Global Water Futures in Washington, DC (by invitation, Feb. 2005).
- “NARUC Critical Infrastructure Program: Overview of Technical Briefs.” To the Ad Hoc Committee on Critical Infrastructure, National Association of Regulatory Utility Commissioners (Feb. 2005).
- “How Should State Regulatory Agencies Change in Response to the Changes in the Industries They Regulate?” at the Western Conference of Public Service Commissioners in Anchorage, AK (June 2004).
- “Privatization of Water Services: Limits to Competition and the Role of Regulation.” Salon des Technologies Environnementales du Quebec (March 2004).
- “U.S. and Global Regulatory Models.” National Drinking Water Symposium in Colorado Springs, CO (Oct. 2003).
- “Regulatory Change and Challenges.” a forum sponsored by the Federal Reserve Bank of Chicago in Detroit, MI (March 2003).
- “Ethics of Water Utility Privatization.” Annual Conference of the American Water Works Association in New Orleans, LA (June 2002).
- “What Regulators Need to Know about Drought.” Annual Meeting of the New England Conference of Public Utility Commissioners, Stowe, VT (June 2002 and the Annual Meeting of the NARUC Water Committee, Portland, ME (July 2002).

- “Closing the Gap: Regulatory Roles and Industry Challenges.” National Drinking Water Symposium in St. Petersburg, FL (March 2002).
- “Impacts of Deregulation on the Water Industry” (with Scott J. Rubin), at the Annual Conference of the California Urban Water Institute (March 2001); Pennsylvania Chapter of the National Association of Water Companies (Oct. 2000; Metropolitan Water District of Southern California (Aug. 2000); and Annual Conference of the American Water Works Association in Denver, CO (June 2000).
- “The Water Industry: Issues and Challenges.” Annual Meeting of the Kentucky Rural Water Association (Feb. 2001).
- “Strategic SDWA Compliance Planning for Small Systems” (with Peter E. Shanaghan), at the Annual Conference of the American Water Works Association in Denver, CO (June 2000); at the Annual Meeting of the Kentucky Rural Water Association (Feb. 2001).
- “Current Issues in Water Utility Regulation.” Annual Utility Conference of the Kentucky Public Service Commission (Oct. 1999 and 2000).
- “Regulators’ Panel.” Moderator for a panel at the National Association of Water Companies Annual Meeting (General Sessions, 1996, 1999, and 2000).
- “Regulatory Incentives for Consolidation.” Annual Conference of the Southeast Association of Regulatory Utility Commissioners in New Orleans, LA (June 2000).
- “Water Accountability and the EPA Water Conservation Plan Guidelines.” Annual Conference of the American Water Works Association in Chicago, IL (1999).
- “The Water Industry: Unique Characteristics and Innovative Regulatory Techniques.” Meeting of the NARUC Subcommittee on Accounts in New Orleans, LA (March 1999).
- ”Integrating Conservation in Resources Planning.” Moderator at Conserv99, Monterey, CA (Feb. 1999).
- “Water Compared.” Annual Meeting of the National Association of Water Companies, Greenbrier, WV (Oct. 1998).
- “Single-Tariff Pricing.” Annual Meeting of the National Association of Water Companies, Greenbrier, WV (Oct. 1998).
- “Water Affordability.” Meeting of the NARUC Subcommittee on Accounts in Indianapolis, IN (Sept. 1998).

- “The Water Industry Compared: Structural, Regulatory, and Strategic Issues for Utilities in a Changing Context.” Five annual regional conferences of the National Association of Regulatory Utility Commissioners (Spring and Summer 1998).
- “The 1996 SDWA and Structural Change in the Water Industry.” Annual Convention of the American Water Works Association in Dallas, TX (June 1998).
- “Efficiency and Profitability: Conservation Incentives for Investor-Owned Water Utilities.” Annual Conference of the American Water Works Association in Dallas, TX (June 1998).
- “Source-Water Protection under the 1996 SDWA: A Paradigm Shift.” IUPUI SPEA Statehouse Colloquium Series (Feb. 1998).
- “Efficiency and Structure: Structural Change Under the 1996 SDWA.” Annual Meeting of the Indiana Chapter of the American Water Works Association (Feb. 1998).
- “The Last Monopoly: Competition and Regulation in the Water Industry.” Annual Meeting of the National Association of Regulatory Utility Commissioners in Boston, MA (Nov. 1997).
- “Capacity through Restructuring: Structural Change in the Water Industry under the 1996 Safe Drinking Water Act.” Annual Meeting of the National Association of Regulatory Utility Commissioners in Boston, MA (Nov. 1997).
- “Sourcebook of Regulatory Techniques for Water Utilities.” a general session of the Annual Meeting of the National Association of Water Companies in San Diego, CA (Sept. 1997).
- “Water Conservation Guidelines Provision in the 1996 Safe Drinking Water Act.” Annual Meeting of the Illinois-Missouri Chapter of the National Association of Water Companies, San Diego, CA (1997).
- “Water Conservation Guidelines Provision in the 1996 Safe Drinking Water Act.” AWWA/EPA Water Conservation Workshop in Denver, CO (Sept. 1997).
- “Water Policy Forum.” Panelist at the forums of the National Association of Water Companies in Naples, FL (Sept. 1997, 1996, and 1995).
- “Affordability Provisions of the 1996 Safe Drinking Water Act.” Annual Meeting of the Southeastern Association of Regulatory Utility Commissioners in Lexington, KY (May 1997).
- “Alternative Ratemaking Approaches for the Water Industry.” University of Missouri 1997 Rate Symposium, St. Louis, MO (April 1997).
- “Current Research Findings in Water Utility Ratemaking.” Annual Meeting of the Indiana Section of the National Association of Water Companies (March 1997).

- “What are Fair Water Rates?” at the Annual Meeting of the Indiana Chapter of the American Water Works Association (Feb. 1997).
- “Current Research Findings in Water Utility Ratemaking.” a general session of the Annual Meeting of the National Association of Water Companies in Orlando, FL (Oct. 1996).
- “The Water Industry: Trends and Issues.” Mid-America Regulatory Conference in Chicago; June 1996; and the Great Lakes Conference of Utility Commissioners in Cleveland (July 1996).
- “Water Pricing and Community Development.” Indiana Section meeting of the National Association of Water Companies, Indianapolis, IN (March 1996).
- “Closing the Gap: The Water Infrastructure Funding Challenge.” Mid-America Regulatory Conference on Mackinac Island, MI (June 2001 and the Annual Indiana NAWC Chapter Meeting in Indianapolis, IN (Sept. 2001).
- “Multi-Objective Ratemaking for Water Utilities: Efficiency, Equity, and Affordability.” Annual Conference of the American Water Works Association in Washington, DC (June 2001).
- “Survey of State Agency Water Loss Reporting Practices: Preliminary Findings.” Annual Conference of the American Water Works Association in Washington, DC (June 2001).
- “The Infrastructure Funding Gap: Reality Checks.” American Water Works Association Infrastructure Conference in Orlando, FL (March 2001; at the Annual Conference of the Council of State Community Development Agencies in St. Louis, MO (April 2001).
- “Impacts of Competition on the Water Industry.” Panelist at the Water Committee Seminar of the Winter Meeting of the National Association of Regulatory Utility Commissioners in Washington, DC (Feb. 1995).
- “Musings on the Post-ULV Era.” Panelist at Conserv96 Conference in Orlando, FL (Jan. 1996).
- “Environmental Public-Private Partnerships: Setting the Tone for the Future.” Panelist at the Annual Conference of the National Council for Public-Private Partnerships in Chicago, IL (Oct. 1995).
- “Regulatory Implications of Water and Wastewater Utility Privatization.” Illinois Commerce Commission in Springfield, IL (Oct. 1995).
- “Structure and Regulation of the Water Utility Industry: Changes and Challenges.” Utilities Conference of the Indiana CPA Society (Oct. 1995).
- “Water Demand, Prices, and Revenues: The Effects of Conservation.” Annual Conference of the American Water Works Association in Anaheim, CA (June 1995).



- "Reauthorization of the Safe Drinking Water Act." Moderator at the Annual Meeting of the Mid-America Regulatory Conference in Indianapolis, IN (June 1995).
- "Emerging Issues in Benchmarking and Performance-Based Water Utility Regulation." Annual Meeting of the New England Chapter of the National Association of Water Companies in Kennebunkport, ME (May 1995).
- "Regulatory Implications of Water Utility Privatization: Research Findings." Water Committee Seminar of the Winter Meeting of the National Association of Regulatory Utility Commissioners in Washington, DC (Feb. 1995).
- "The Water Industry: Coordinating Regulatory Functions and Resource Planning" to the Select Committee on Water Policy of the Florida House of Representatives in Tallahassee, FL (Feb. 1995).
- "Emerging Regulatory Requirements for Conservation and IRP." American Water Works Association Water Conservation Workshop in Santa Fe, NM (Jan. 1995).
- "Managing Watersheds for the Twenty-First Century: An Integrated Planning Perspective." Panelist at the Wayne Nichols Program, School of Natural Resources, The Ohio State University (Nov. 1994).
- "Impacts of Legislative Regulations." Panelist at the Annual Conference of the Water Management Association of Ohio (Nov. 1994).
- "Integrated Approaches to Resource Planning and Environmental Protection." Organizer and moderator at the Public Policy Roundtable on Business and the Environment, School of Public Policy, The Ohio State University (Oct. 1994).
- "Regulatory Excellence for the 21st Century." Annual Meeting of the National Association of Water Companies in Scottsdale, AZ (Oct. 1994).
- "Financial Distress Assessment Models for Small Water Utilities." Annual Conference of the American Water Works Association in New York, NY (June 1994).
- "Decision Analysis for Integrated Resource Planning." Moderating panelist at the Annual Conference of the American Water Works Association in New York, NY (June 1994).
- "General Summary of the NRRI State Commission Survey on Water Conservation Pricing and Revenue Recovery Issues." To the Committee on Rates and Charges at the Annual Conference of the American Water Works Association in New York, NY (June 1994).
- "Water Utilities and the Environment." Annual Technical Conference of the National Association of Regulatory Utility Commissioners in Washington, DC (Feb. 1994).

- "Incentive Regulation for Water Utilities." Water Committee Seminar at the Winter Meeting of National Association of Regulatory Utility Commissioners in Washington, DC (Feb. 1994).
- "Integrated Resource Planning for Water Utilities." Conserv93 in Las Vegas, NV (Dec. 1993).
- "The Role of the State Public Utility Commissions in Water Conservation." Moderator for an affinity group at Conserv93 in Las Vegas, NV (Dec. 1993).
- "Consensus Building for Integrated Water Resource Planning: Discussion Paper." Annual Conference of the American Water Works Association in San Antonio, Texas (June 1993).
- "Water Utility Regulatory Issues" Panelist at the Meeting of the New England Chapter of the National Association of Water Companies in Plymouth, Massachusetts (June 1992).
- "Contemporary Water Issues." To the Energy and Public Utilities Committee of the Connecticut General Assembly in Hartford, Connecticut (Jan. 1992).
- "Small Systems Solutions." Annual Meeting of the National Association of Water Companies in St. Louis, Missouri (Oct. 1990).
- "Economics of Future Water Supplies." Conference on Water Sufficiency for the 21st Century Sponsored by the International Center for Water Resources Management, Central State University in Wilberforce, OH, May 1990).
- "State Regulatory Issues in the Age of Discovery." American Water System Annual Management Seminar in Columbus, OH (May 1989).
- "State Public Utility Commissions and State Drinking Water Administrators: A Case for Interagency Coordination." Environmental Protection Agency's Workshop on Financing Strong State Water Programs in Denver, CO (April 1989).
- "Applying Political Science." Applied Political Science Panel of the Annual Meeting of the American Political Science Association, Chicago, IL (Sept. 1987).

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#### EXPERT TESTIMONY

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- Testimony (informal) on regulatory commission structure and independence before the Governor's Consumer Energy Protection Task Force in Helena, Montana (Jan. 2004).
- Testimony on ratemaking policy before Indiana Utility Regulatory Commission (Sept. 2001).
- Testimony before the United States Congress (Senate Public Works Committee and two House Subcommittees) on behalf of the H<sub>2</sub>O Coalition regarding national water infrastructure funding issues (March 2001).

Testimony on ratemaking policy before the Missouri Public Service Commission (July 1997 and Feb. 2001).

Testimony on water industry restructuring before the California Public Service Commission (Nov. 2000).

Testimony on single-tariff pricing for water utilities before the California Public Service Commission (June 1999 and Aug. 2000).

Testimony on single-tariff pricing for water utilities before the Missouri Public Service Commission (July 1997 and June 2000).

Testimony on single-tariff pricing for water utilities before the New Hampshire Public Service Commission, Feb. 1998; before the Indiana Utility Regulatory Commission (Feb. 1997; before the Florida Public Service Commission (Feb. 1996).

## **INSTRUCTIONAL EXPERIENCE**

### UNIVERSITY COURSES

“Regulation in the Political Economy” (Graduate, PPL891). Michigan State University Master in Public Policy Program (Spring 2015, Spring 2014, Summer 2009, Spring 2015, Spring 2018).

“The U.S. Regulatory Model,” Guest lecture for a graduate class at the Florence School of Regulation (annually 2012 to present).

“Public Policy” (Graduate, PPL807). Michigan State University Master in Public Policy Program (Fall 2007 and Fall 2008).

“Government and Markets: Public, Private, and Nonprofit Roles” (Graduate PPL891). Michigan State University Master in Public Policy Program (Summer 2008).

“Regulated Industries” (College of Law, Course 523). Team taught with Prof. Adam Candeub. Michigan State University College of Law (Spring 2005 and Spring 2006).

“Privatization” (Graduate/Undergraduate, V450/550). School of Public and Environmental Affairs, Indiana University (IUPUI). (Spring 1998 and Summer 1997). Previously, “Politics and Markets” (Undergraduate Y380). Political Science, Indiana University, Indianapolis (Fall 1996).

“Public Policy Process” (Graduate, V512). School of Public and Environmental Affairs, Indiana University, Indianapolis (Fall 1995, Summer 1996, and Spring 1997).

"Introduction to Public Affairs" (Undergraduate, V170). School of Public and Environmental Affairs, Indiana University, Indianapolis (Spring 1996).

"Public Policy and Program Implementation" (Graduate, PPM 803). School of Public Policy and Management, The Ohio State University (Spring 1992 and Winter 1993).

"Public Policy Formulation and Administration" (Graduate, PPM 801). School of Public Policy and Management, The Ohio State University (Fall 1991).

#### EDUCATIONAL WORKSHOPS AND FACILITATION

Annual Regulatory Studies Program, Institute of Public Utilities, Michigan State University.

Curriculum architect and lead instructor for introduction to regulation, cost allocation, ethics and independence, and water industry regulation (Since 2002). Coordinator and instructor for special orientation workshops for international regulators. Annual participation as core program faculty member since 1994. Also teach other introductory, advanced, and specialty workshops conducted by the Institute (onsite and offsite).

Human Right to Water Academic Workshop, State of California. Discussant. Sacramento, CA (Oct. 2019).

Socio-Hydrological Dynamics, Santa Fe Institute. Panelist and discussant. (June 2018).

Executive Masters Program, Innovative Governance of Large Urban Systems (EPFL, Switzerland). Lead coordinator for U.S. modules in Detroit, East Lansing, and Chicago (2015 to 2018).

Semi-Annual NARUC Water Utility Rate School. Lead instructor on comparative industry structures and regulation, rate design, and regulatory alternatives. Sponsored by the National Association of Regulatory Utility Commissioners (Fall 1997 to Fall 2018).

Special Seminars in Public Utility Regulation for International Professionals. Michigan State University, Visiting International Professional Program. Includes customized programs for the Energy Market Regulatory Authority of Turkey and the Korea Electric Power Corporation (various years).

Introduction to Water Utility Rates and Survey Overview. Workshops in Ann Arbor, MI; Racine, WI; and Buffalo, NY, as part of the Value of Great Lakes Water Project of the Great Lakes Protection Fund. (Spring 2011).

Introduction to Public Utility Regulation. Training workshop for the South Carolina Public Service Commission in Columbia, SC (Dec. 10, 2010).

Water Utility Regulation and Sustainability. Workshop for the Korea Water Resources Corporation in Clearwater, FL (Oct. 30, 2010).

Facilitation for the Board Retreat of the Organization of MISO States. Columbus, OH (March 28, 2008).

EPA Full-Cost Water Pricing Workshop. Hosted by the Institute of Public Utilities at Michigan State University (Nov. 1-3, 2006).

Capacity Development for Water Systems. Workshop for water professionals on capacity developments, financial capacity, managerial capacity, and ratemaking. Sponsored by the U.S. Environmental Protection Agency Drinking Water Academy in New Orleans, LA; Minneapolis, MN; Reno, NV; Pierre, SD; Denver, CO; and Cheyenne, WY (2000-2001).

Facilitated Workshop on Water Utility Regulatory Issues. For the Delaware Chapter of the National Association of Water Companies (April 2001); for the Connecticut Department of Public Utility Control (Sept. 1999).

Workshop for Congressional Staff Members on Water Infrastructure Issues. Sponsored by the H<sub>2</sub>O Coalition in Washington, DC (May 2001).

Overview of Policy and Regulatory Issues at the Workshop on the Valuation of Water Utilities. Sponsored by Public Utility Reports and the National Association of Water Companies in San Diego (Jan. 2000).

Workshop on Regulation and Privatization. Sponsored by the Centre for Interuniversity Research and Analysis on Organizations (CIRANO) in Montreal, QC (March 1999).

Water Conservation Guidelines Workshop. Consultant to US EPA. Sponsored by the American Water Works Association and the U.S. Environmental Protection Agency in Denver, CO (Sept. 1997).

AWWA National Teleconference on Water Industry Privatization. Sponsored by the American Water Works Association in Denver, CO (Nov. 1996).

Public Involvement Workshop. Moderator at the Annual Meeting of the American Water Works Association Meeting in Toronto, ON (June 1996).

Workshop on Water Industry Structure, Regulation, and Ratemaking for a delegation from Japan hosted by the American Water Works Association in Denver, CO (April 1996).

Regulatory Studies Program for the Louisiana Public Service Commission hosted by Institute of Public Utilities, Michigan State University, in Baton Rouge, LA (Feb. 1996). Lead instructor for water utility regulation.

Workshop on the Structure and Regulation of the Water Industry for the Ohio Consumers' Counsel in Columbus, OH (Jan. 1996).

Advanced Regulatory Studies Program of the Institute of Public Utilities, Michigan State University in Annapolis, Maryland (Jan. 1996). Lead instructor for water utility regulation.

National Regulatory Research Institute Tutorial for New Commissioners. Instructor on structure and regulation of the water industry for in-house seminars held in Columbus, OH (1990 to 1995).

Workshop on Economic Regulation of Water Utilities in the United States for a delegation from Argentina (ETOSS) in Washington, DC (April 1994).

World Bank Workshop on Institutional Options for Price Regulation of Water Utilities in Washington, DC (April 1994).

Water Policy Forums at the NRRI Biennial Regulatory Information Conference in Columbus, OH (Sept. 1992 and Sept. 1994). Organized and moderated panels on water utility regulation.

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#### PROFESSIONAL APPOINTMENTS AND AFFILIATIONS

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Dissertation Committees, Departments of Economics and Geography, College of Social Science, MSU (2020).

Member. Editorial Board, *Journal of Competition and Regulation in Network Industries* (2009 to 2014; 2017 to present).

Member. Environmental Finance Advisory Board, U.S. Environmental Protection Agency (2016-present).

Member of the Future Electric Utility Regulation Advisory Group, Berkeley Lab (2015 to present).

Member. Editorial Board, International Confederation of Energy Regulators (ICER) *Journal on Energy Regulation* (2013 to 2018).

Member. Advisory Group for the University of Michigan Lead and Copper Rule Project (2018 to 2019).

Chair. Water Rates Subcommittee of the Flint Interagency Coordinating Committee (2017 to 2018).

Member of the Advisory Council, MSU Center for Local Government Finance and Policy (2016 to 2018).

Dissertation Committee, Department of Accounting and Information Systems, Broad College of Business, MSU (2017).

Dissertation Committee, College of Management of Technology, EPFL, Switzerland (2016).

Member. State of Michigan's 21<sup>st</sup> Century Infrastructure Commission (2016).

Member of the Technical Advisory Committee, Financial Focus Area, Water Research Foundation (July 2013 to 2016).

Member of the Detroit Blue Ribbon Panel on Water Affordability (2015-2016).

Member of the Government Accounting Standards Board Asset Retirement Obligations Task Force, 2015.

Member. Scientific Advisory Board, Next Generation Infrastructures, Delft University of Technology, Netherlands (2010 to 2012).

Systems Team, Michigan State University (2012 to 2013). Energy Transition Committee (2011-2012).

U.S. Environmental Protection Agency Workshop on Managing the Environmental Impacts of Growth Under Climate Change, Durham, NC (Nov. 2011).

Winning the Future: Standards and Technologies Critical to the Development of Sustainable Smart Water Communities, Sponsored by the White House Business Council, Albuquerque, NM (Sept. 2011).

Aspen Institute Dialogue on Sustainable Water Infrastructure in the U.S. (2008-2009). Resulted in published report, *Sustainable Water Systems* (May 2009).

Member of the Technical Advisory Board and Participant in the International Exchange Program on Regulation of Water Services and Sustainability (inaugural meeting in Rome, Jan. 2009).

Affiliate, Environmental Science and Policy Program, Michigan State University (2007 to present).

Affiliate, Center for Water Sciences, Michigan State University (2006 to present).

Humphrey Fellowship Program Mentor, Michigan State University (2005-2006, 2008-2009).

Land Policy Council, Michigan State University (2005 to 2007).

Dissertation Committee, Public Administration, Western Michigan University (2004 to 2007).

Board of Directors for the Center for Underground Infrastructure, Michigan State University (2005 to 2007).

Freshwater Ecosystem Sustainability Certification Roundtable, Nature Conservancy (Oct. 4, 2006).

Program Advisory Committee, World Forum on Energy Regulation III (2005-2006).

Water Working Group of the Environmental Change and Security Project, Woodrow Wilson International Center for Scholars (2003 to 2005). Included a group study tour in Mexico.

Water Science and Technology Board's Committee on Privatization of Water Services in the United States. National Research Council, National Academy of Sciences (1999 to 2002). Resulted in published report, *Privatization of Water Services in the United States* (2002).

American Water Works Association. Member of the Competitive Practices Committee (2000 to 2002). Chair of the Infrastructure Conference Planning Committee (2002). Member of the Infrastructure Conference Planning Committee (2001). Member of the Rates and Charges Subcommittee of the Financial Management Committee (1994 to 2002). Member of the Water Conservation Committee (1993 to 1999). Liaison to the AWWA Management Division (1995).

Report Reviewer for "Safe Water from Every Tap." National Research Council, National Academy of Sciences (1996).

Project Advisory Committee for Small System Regionalization Study. American Water Works Association Research Foundation (1994 to 1996).

Study Group on Identity, Indiana University Purdue University Indianapolis (1995 to 1996).

Project Review Committee for "The Future of Municipal Water Services." Rocky Mountain Institute (1995).

Mayoral appointee to the Columbus Water Conservation Advisory Board (1994 to 1995).

Staff Subcommittee of the Water Committee. National Association of Regulatory Utility Commissioners, NRRI Observer (1989-2002).

Governor's Appointee to the State of Ohio Pollution Prevention Development Workgroup (1993 to 1994).

Executive Committee for the Applied Section, American Political Science Association (1987-1989).

Research Advisory Committee of The National Regulatory Research Institute (1987-1988).

Alliance for Least-Cost Energy Planning, City of Chicago (1987-1988).



Peer Review and Professional Input: U.S. Environmental Protection Agency (cost models and surveys), Great Lakes Protection Fund, Water Resources Research, Utilities Policy, Industrial and Corporate Change, Journal of Infrastructure Systems, Water Resources Update, Water Resources Planning and Management, American Water Works Association Journal, American Water Works Association Research Foundation, U.S. Congressional Research Service, U.S. Government Accountability Office, and numerous reports, publications, and research proposals.

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#### EXPERTISE AND PROFESSIONAL SKILLS

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- ❑ Regulatory institutions, governance, policy, and ethics
- ❑ Theory and practice of public utility regulation
- ❑ Social dimensions of public utility networks
- ❑ Water industry structure, privatization, and pricing
- ❑ Rates, rate design, and affordability of utility services
- ❑ Environmental and resource policy and regulation
- ❑ Interdisciplinary conceptual and analytical frameworks
- ❑ Academic journal management and research editing

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#### CONTACT INFORMATION

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