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Education

- Post-Doctoral Fellow, Utility Planning and Policy Group, Energy and Environment Division, Lawrence Berkeley Laboratory, February 1991–July 1992. Conducted research on electric transmission policy. Advisor: Dr. Edward Kahn.
- Ph.D., Electrical Engineering and Computer Sciences, University of California, Berkeley, December 1990; GPA: 4.0.
 - Dissertation Title: “Improving Power System Operating Efficiency Through Real-Time Control and Tariffs.” Committee: Professor Felix Wu (Advisor and Chairman), Professor Pravin Varaiya, Professor Shmuel Oren.
 - Graduate Course Work: linear and non-linear system theory, continuous and discrete optimization, topology, real analysis, stochastic processes, information theory, power systems, time series analysis, technical writing.
- M.S., Electrical Engineering and Computer Sciences, University of California, Berkeley, May 1988; GPA: 4.0.
- B.E., Electrical Engineering, first-class honors, medal (pr. acc.), University of Sydney, Australia, March 1985; GPA: 4.0.
- B.Sc., Physics and Pure Mathematics, University of Sydney, Australia, March 1983; GPA: 4.0.

Professional Experience

- Emeritus Professor, Department of Electrical and Computer Engineering, The University of Texas at Austin, 9/19–present. Professor and Leland Barclay Fellow, Department of Electrical and Computer Engineering, The University of Texas at Austin, 9/03–8/19. Associate Professor, Department of Electrical and Computer Engineering, The University of Texas at Austin, 9/98–8/03. Assistant Professor, Department of Electrical and Computer Engineering, The University of Texas at Austin, 1/94–8/98. Conducted research on: power system economics, electric network interdiction, interdependent networks, transmission planning, and renewable integration; and, continuous and discrete optimization applied to energy systems, integrated circuit layout, and ATM networks. Taught optimization, power systems, and probability and statistics courses. Supervised graduate students.
- Visiting Researcher, Florence School of Regulation, Florence, Italy, 9/17–11/17. Conducted research on transmission charging policies.
- Visiting Researcher, Instituto de Investigación Tecnológica, Universidad Pontificia Comillas, Madrid, Spain, 9/09–10/09, 3/12, and 5/14. Conducted research on wind integration.
- Visiting Researcher, University of California Energy Institute, 6/00–8/00 and 7/01–8/01. Conducted research on equilibrium models of electricity markets.
- Research Fellow, Harvard Electricity Policy Group, John F. Kennedy School of Government, Harvard University, 9/00–12/00. Conducted research on equilibrium models of electricity markets.

- Staff Scientist, Utility Planning and Policy Group, Energy and Environment Division, Lawrence Berkeley Laboratory, 6/93–8/93. Conducted research on electric transmission planning and policy.
- Assistant Professor, Department of Electrical and Computer Engineering, Worcester Polytechnic Institute, 3/92–12/93. Conducted research in the areas of discrete and continuous optimization, with application to distributed computing environments, mixed-integer linear and non-linear programming, and power systems engineering. Taught control and power systems courses. Supervised graduate student.
- Research Assistant, Electronics Research Laboratory, University of California, Berkeley, 7/88–12/90. Conducted research on optimization theory applied to the coordination of capacitors in an electric distribution system and to improving the allocative efficiency of power system operation.
- Teaching Assistant, Electronics Research Laboratory, University of California, Berkeley, 2/89–5/89. Led discussion section and presented some lectures for the graduate course 221A, Linear System Theory.
- Professional Engineer, Grade 1, System Planning and Control Divisions, Electricity Commission of New South Wales, Australia, 3/85–7/86. Developed software for electricity system planning and control. Performed transmission planning studies.
- Technical Trainee, Toshiba Corporation, Tokyo, Japan, 12/84–2/85. Observed the operation of the manufacturing facility at the Toshiba Fuchu plant.

Leadership and Board Positions

- Technical Advisory Board Member, Tabors Caramanis Rudkevich Stochastic Nodal Adequacy Pricing Project, 11/2021–present.
- Director, Center for Electric Vehicles: Transportation and Electricity Convergence, National Science Foundation Industry/University Cooperative Research Center, The University of Texas at Austin, 8/2011–8/2016.
- Technical Advisory Board Member, Trajecta, Inc., Austin, TX, 1998–1999.

Professional Consulting and Education Services

- Davis Wright Tremaine LLP, July 2021–present. Critical evaluation of PJM transmission cost allocation proposals.
- Rivkin Radler, June 2021–present. Provided input on insurance claims resulting from generation outages.
- Co-Organizer of conference and Moderator of panel session, *Austin Electricity Conference*, Austin, Texas, April 1, 2021.
- Invenia Technical Computing Corporation, July 2020–present. Provided input to market modeling software design.
- Co-Organizer of conference and Moderator of panel session, *Austin Electricity Conference*, Austin, Texas, March 5–6, 2020.
- Market Reform, March–August 2020. Provided input into modeling of future outcomes of Australian National Electricity Market.

- Intelligent Energy Systems, January–February 2020. Reviewed arrangements for short-term reliability assessments in US Independent System Operators.
- Co-Organizer of conference and Moderator of panel session, *Austin Electricity Conference*, Austin, Texas, 2019.
- Co-Organizer of conference and Moderator of panel session, *Austin Electricity Conference*, Austin, Texas, 2018.
- California ISO, November 2017–January 2018. Reviewed documents and developed testimony in legal proceeding regarding transmission utilization.
- Co-Organizer of conference and Moderator of panel session, “Managing the Decarbonized Grid,” *Austin Electricity Conference*, Austin, Texas, April 20–21, 2017.
- Co-Organizer of conference and Moderator of panel session, “Does Decentralization Make Sense?” *Austin Electricity Conference*, Austin, Texas, April 21–22, 2016.
- Moderator of session, “Changing Currents in Transmission,” *Gulf Coast Power Association Conference*, Austin, TX September 30–October 1, 2015.
- Instructor, “Locational Marginal Pricing,” Master Class, German Institute for Economic Research (DIW), Berlin, Germany, May 26, 2015.
- Co-Organizer of conference and Moderator of panel session, “Integrating Distributed Energy Resources,” *Austin Electricity Conference*, Austin, Texas, April 9–10, 2015.
- Texas Comptroller, November 2014 and August–September 2018. Reviewed documents in legal proceeding regarding energy involved in telecommunications services.
- Tabors Caramanis Rudkevich, June 2014–December 2014. Developed market design proposal for Alberta electricity market.
- Husch Blackwell, June 2014–October 2014. Reviewed documents and developed testimony in legal proceeding regarding proposed transmission expansion.
- Co-Organizer of conference and Moderator of session, “Opportunities and Challenges at the Gas-Electricity Nexus,” *Austin Electricity Conference*, Austin, Texas, April 3–4, 2014.
- Intelligent Energy Systems, March 2014. Reviewed spinning reserve in the ERCOT electricity market.
- Milner Power, June 2013–October 2013, March 2015–May 2015, March 2016, and May–July 2017. Reviewed market arrangements and developed testimony in legal proceeding regarding loss charges in Alberta System.
- Intelligent Energy Systems, June 2013–August 2013. Reviewed unit commitment in day-ahead electricity markets.
- Co-Organizer of conference and Moderator of session, “Are Capacity Markets Necessary to Ensure Adequate Generating Reserve,” *Austin Electricity Conference*, Austin, Texas, April 18–19, 2013.
- California Independent System Operator, January 2013–May 2013. Reviewed documents related to Southern California Import Limit constraint.
- Strasburger and Price, LLP, December 2012–May 2013 and August 2014–October 2014. Reviewed documents in regulatory proceeding.

- Électricité de France Renewable Energy, March 2013. Reviewed documents and drafted testimony in legal proceeding.
- Organizer and Moderator, Panel on the future of the electric car, Austin, Texas, December 11, 2012.
- Direct Energy, September 2012–December 2012. Reviewed wind power purchase agreements.
- ABB, June 2012–August 2012. Reviewed proposal for ERCOT lookahead economic dispatch.
- Co-Organizer of conference and Moderator of session, “The Challenges of Integrating Renewable Power into the Electric Grid,” *Austin Energy Conference*, Austin, Texas, April 4–5, 2012.
- Suez North America, July 2011–August 2011. Reviewed ERCOT scarcity pricing mechanism.
- Direct Energy, May 2011–June 2012. Reviewed ERCOT shadow price cap mechanism.
- Lecturer, “Economics & Technology of the Electric Power Value Chain,” Texas Executive Education Certificate Program, McCombs School of Business, University of Texas at Austin, 2011–present.
- United Kingdom Ofgem, October 2010–May 2011. Participated in review and critique of transmission charging methodology in the United Kingdom and proposed alternatives.
- Co-Organizer of conference and Moderator of session, “Smart-Grid Standard Setting and Interoperability,” *Austin Energy Conference*, Austin, Texas, April 7–8, 2011.
- Convenor and Moderator, “The future of the electricity industry,” Austin, Texas, June 10, 2010.
- Midwest ISO, December 2009–December 2011. Developed theory and algorithm for improved inter-regional trade between Midwest ISO and adjacent regions.
- Alcoa Inc, April 2009–May 2010. Provided analysis of operation of the ERCOT electricity market.
- Direct Energy, September–October 2008. Provided analysis of contractual arrangements regarding wind contracts.
- John Deere Wind Energy, April 2008–April 2010. Provided analysis of non-contractual arrangements regarding wind issues.
- Compete Coalition, May 2008–March 2009. Provided analysis and comparison of uniform clearing price and pay-as-bid in electricity markets.
- Convenor and Moderator, “ERCOT Energized: The good, the bad, and the ugly of the new Texas Nodal Market Design,” Austin, Texas, May 2, 2008.
- WIRES, the Working group for Investment in Reliable and Economic Electric Systems, 2007. Co-authored white paper on transmission cost allocation.
- FPL Energy, 2006–2007. Provided analysis of contractual arrangements regarding transmission services.
- Boston Pacific Company, 2004–2008, transmission consultant to Boston Pacific in their role as independent market monitor to the Southwest Power Pool.

- Competitive Power Advocates, December 2003–December 2010. Provide technical and consulting advice on restructuring of the ERCOT electricity market and market design.
- Organizer and Lecturer, “Economics of Locational Marginal Pricing,” a one day course, 2003–present, taught under contract with ERCOT to ERCOT stakeholders, March 2006–November 2010.
- Organizer and Lecturer, “Introduction to Electric Power Systems for Legal and Regulatory Professionals,” a three day course, 1996–present.
- Competitive Power Advocates, December 2002–January 2003, “Shift Factors in ERCOT Congestion Management.” Provided evidence of economic and technical inefficiency of ERCOT congestion management protocol.
- Organizer and Moderator, “How will electric deregulation affect Texas?” Austin, Texas, May 2, 2001.
- Dynegy, Colonial Pipeline, March 2001. Prepared initial testimony in Public Utility Commission of Texas Docket No. 23335, “Application of Entergy and FPL Group Regarding Proposed Merger.”
- Frontier Economics, September 2000–April 2001. Provided expert opinion on transmission pricing proposal.
- Reliant Energy, October 1999–March 2000. Deposed in dispute between Reliant Energy and Municipalities served by Reliant concerning leasing arrangements.
- South Texas Electric Cooperative, July 1999. Prepared and filed testimony in Public Utility Commission of Texas Docket No. 19265, “Application of Central and Southwest Corporation and American Electric Power Company, Inc. Regarding proposed business combination.”
- Coalition for a Competitive Electricity Market, May 1999. Presentation at the Technical Conference on Capacity Benefit Margin, Federal Energy Regulatory Commission Docket No. EL99-46-000.
- Enron Corporation, October 1998–April 1999. Prepared testimony in Public Utility Commission of Texas Docket No. 19265, “Application of Central and Southwest Corporation and American Electric Power Company, Inc. Regarding proposed business combination.”
- Bracewell and Patterson, LLP, September–October 1996, February–October 1997. Provided expert opinion on transmission issues.
- California Energy Commission, June–August 1995. Conducted research on the effects of phase-shifting transformers in competitive electricity markets.
- Tenneco Power Generation Company, April 1995. Analyzed and prepared affidavit concerning contractual terms between Texas A&M University and Brazos Electric Power Cooperative.

Books

- *Integration of Large-Scale Renewable Energy into Bulk Power Systems: From Planning to Operation*, (with Pengwei Du and Aidan Tuohy, editors), Springer, 2017.
- *Applied Optimization: Formulation and Algorithms for Engineering Systems*, Cambridge University Press, 2006.

Patents

- “Battery Storage Formulation and Impact on Day Ahead Security Constrained Unit Commitment,” Publication Number 20230026455, (with Yonghong Chen, Assigned to Midcontinent ISO), January 2023.

Refereed Journal Publications

- Hunyoung Shin and Ross Baldick, “Optimal Battery Energy Storage Control for Multi-Service Provision Using a Semidefinite Programming-Based Battery Model,” *IEEE Transactions on Sustainable Energy*, 14(4):2192–2204, October 2023.
- Bing Huang, Arezou Ghesmati, Yonghong Chen, and Ross Baldick, “A computationally efficient pumped storage hydro optimization in the look-ahead unit commitment and real-time market dispatch under uncertainty,” *Electric Power Systems Research*, 225:109798, December 2023.
- Yonghong Chen, Feng Pan, Feng Qiu, Alinson S Xavier, Tongxin Zheng, Muhammad Marwali, Bernard Knueven, Yongpei Guan, Peter B. Luh, Lei Wu, Bing Yan, Mikhail A. Bragin, Haiwang Zhong, Anthony Giacomoni, Ross Baldick, Boris Gisin, Qun Gu, Russ Philbrick, Fangxing Li, “Security-Constrained Unit Commitment for Electricity Market: Modeling, Solution Methods, and Future Challenges,” *IEEE Transactions on Power Systems*, 38(5):4668–4681, September 2023.
- Xianyong Feng, Michael Lewis, Ross Baldick, and Robert Hebner, “Influences on hydrogen production at a wind farm,” *International Journal of Hydrogen Energy*, 48(38):14192–14198, May 2023.
- Les Stanaland, Ross Baldick, Alvaro Cardenas, and Jennifer Holmes, “Protecting the Texas electric grid: A cybersecurity strategy for the Electric Reliability Council of Texas (ERCOT) and the Public Utility Commission of Texas (PUCT),” *Risk, Hazards, & Crisis in Public Policy*, 13(4):322–336, December 2022.
- Pranjali Verma, Mohammad Hesamzadeh, Ross Baldick, Darryl Biggar, Kesanakurthy Swarup, and Dipti Srinivasan, “Bayesian Nash Equilibrium in Electricity Spot Markets: An Affine-Plane Approximation Approach,” *IEEE Transactions on Control of Network Systems*, 9(3):1421–1434, September 2022.
- Yonghong Chen and Ross Baldick, “Battery Storage Formulation and Impact on Day Ahead Security Constrained Unit Commitment,” *IEEE Transactions on Power Systems*, 37(5):3995–4005, September 2022.
- L. Varawala, M. R. Hesamzadeh, G. Dánn, Senior Member, R. Baldick, “A Scalable Formulation for Look-Ahead Security-Constrained Optimal Power Flow,” *IEEE Transactions on Control of Network Systems*, 9(1):138–150, March 2022.
- Haixiang Zhang, Sang Woo Park, Javad Lavaei, and Ross Baldick, “Uniqueness of Power Flow Solutions Using Graph-Theoretic Notions,” *IEEE Transactions on Control of Network Systems*, 9(1):100–112, March 2022.
- Ivan Calero, Claudio A. Cañizares, Kankar Bhattacharya, and Ross Baldick, “Duck-Curve Mitigation in Power Grids With High Penetration of PV Generation,” *IEEE Transactions on Smart Grid*, 13(1):314–329, January 2022.
- Manuel Garcia and Ross Baldick, “Requirements for Interdependent Reserve Types Providing Primary Frequency Control,” *IEEE Transactions on Power Systems*, 37(1):51–64, January 2022.

- Bing Huang, Yonghong Chen, and Ross Baldick, “A Configuration Based Pumped Storage Hydro Model in the MISO Day-Ahead Market,” *IEEE Transactions on Power Systems*, 37(1):132–141, January 2022.
- Yikui Liu, Lei Wu, Yafei Yang, Yonghong Chen, Ross Baldick, and Rui Bo, “Secured Reserve Scheduling of Pumped-Storage Hydropower Plants in ISO Day-Ahead Market,” *IEEE Transactions on Power Systems*, 36(6):5722–5733, November 2021.
- Sang Woo Park, Richard Y. Zhang, Javad Lavaei, and Ross Baldick, “Uniqueness of Power Flow Solutions Using Monotonicity and Network Topology,” *IEEE Transactions on Control of Network Systems*, 8(1):319–330, March 2021.
- Ming Jin, Javad Lavaei, Somayeh Sojoudi, and Ross Baldick, “Boundary Defense Against Cyber Threat for Power System State Estimation,” *IEEE Transactions on Information Forensics and Security*, 16:1752–1767, 2021.
- Michael Brear, Ross Baldick, Ian Cronshaw, and Magnus Olofsson, “Sector Coupling: Supporting Decarbonisation of the Global Energy System,” *The Electricity Journal*, 33(9), November 2020.
- Manuel Garcia, Harsha Nagarajan, and Ross Baldick, “Generalized Convex Hull Pricing for the AC Optimal Power Flow Problem,” *IEEE Transactions on Control of Network Systems*, 7(3):1500–1510, September 2020.
- Morgan T. Kelley, Ross Baldick, and Michael Baldea, “Demand response scheduling under uncertainty: Chance-constrained framework and application to an air separation unit,” *AIChE Journal*, 66(9), September 2020.
- Morgan T. Kelley, Ross Baldick, Michael Baldea, “A direct transcription-based multiple shooting formulation for dynamic optimization,” *Computers and Chemical Engineering*, 140:106846, September 2020.
- Morgan T. Kelley, Ross Baldick, and Michael Baldea, “An empirical study of moving horizon closed-loop demand response scheduling,” *Journal of Process Control*, 92:137148, August 2020.
- Bowen Hua, Bing Huang, Ross Baldick, and Yonghong Chen, “Tight Formulation of Transition Ramping of Combined Cycle Units,” *IEEE Transactions on Power Systems*, 35(3):2167–2175, May 2020.
- David Rosewater, Surya Santoso, and Ross Baldick, “Risk-Averse Model Predictive Control Design for Battery Energy Storage Systems,” *IEEE Transactions on Smart Grid*, 11(3):2014–2022, May 2020.
- Vaidyanathan Krishnamurthy, Bing Huang, Alexis Kwasinski, Evan Pierce, and Ross Baldick, “Generalized Resilience Models for Power Systems and Dependent Infrastructure During Extreme Events,” *IET Smart Grid*, 3(2):194–206, April 2020.
- Heejung Park and Ross Baldick, “Optimal capacity planning of generation system integrating uncertain solar and wind energy with seasonal variability,” *Electric Power Systems Research*, 180:106072, March 2020.
- Manuel Garcia and Ross Baldick, “Approximating Economic Dispatch by Linearizing Transmission Losses,” *IEEE Transactions on Power Systems*, 35(2):1009–1022, March 2020.
- Sambuddha Chakrabarti and Ross Baldick, “Look-Ahead SCOPF (LASCOPF) for Tracking Demand Variation via Auxiliary Proximal Message Passing (APMP) Algorithm,” *International Journal of Electrical Power and Energy Systems*, 116, March 2020.

- D. Zografos, J. Matevosyan, R. Eriksson, R. Baldick, M. Ghandharia, “Frequency Response Assessment: Parameter Identification of Simplified Governor Response Models Using Historic Event Data,” *CIGRE Science and Engineering*, 17:150–167, February 2020.
- Jeff Manning and Ross Baldick, “A novel clear-sky index for color sky imagery used in short-term irradiance forecasting,” *Journal of Renewable and Sustainable Energy*, 12(1), January 2020.
- Jeong Ho Choi, Hyeongon Park, and Ross Baldick, “Transmission Investment and Expansion Planning for Systems with High-Temperature Superconducting Cables,” *IEEE Transactions on Applied Superconductivity*, 29(8):5403109, December 2019.
- Richard Zhang, Javad Lavaei, and Ross Baldick, “Spurious Local Minima in Power System State Estimation,” *IEEE Transactions on Control of Network Systems*, 6(3):1086–1096, September 2019.
- Jeff Manning and Ross Baldick, “Forecasting Short-term Dynamics of Shallow Cumuli using Dynamic Mode Decomposition,” To appear in *Journal of Renewable and Sustainable Energy*, 11(5) September 2019.
- Ramtin Madani, Javad Lavaei, and Ross Baldick, “Convexification of Power Flow Equations in the Presence of Noisy Measurements,” *IEEE Transactions on Automatic Control*, 64(8):3101–3116, August 2019.
- Bowen Hua, Dane Schiro, Tongxin Zheng, Ross Baldick, and Eugene Litvinov, “Pricing in Multi-Interval Real-Time Markets,” *IEEE Transactions on Power Systems*, 34(4):2696–2705, July 2019.
- J. Zarnikau, C.K. Woo, S. Zhu, R. Baldick, C.H. Tsai, J. Meng, “Electricity market prices for day-ahead ancillary services and energy: Texas,” *Journal of Energy Markets*, 12(1):43–74, March 2019.
- Gautham Ram Chandra Mouli, Mahdi Kefayati, Ross Baldick, and Pavol Bauer, “Integrated PV Charging of EV Fleet Based on Energy Prices, V2G and Offer of Reserves,” *IEEE Transactions on Smart Grid*, 10(2):1313–1325, March 2019.
- Morgan T. Kelley, Ross Baldick, and Michael Baldea, “Demand response operation of electricity-intensive chemical processes for reduced greenhouse gas emissions: Application to an air separation unit,” *ACS Sustainable Chemistry & Engineering*, 7(2):1909–1922, February 2019.
- Duehee Lee, Hunyoung Shin, and Ross Baldick, “Bivariate Probabilistic Wind Power and Real-Time Price Forecasting and their Applications to Wind Power Bidding Strategy,” *IEEE Transactions on Power Systems*, 33(6):6087–6097, November 2018.
- Mansoureh Peydayesh and Ross Baldick, “Simplified Model of ERCOT Frequency Response Validated and Tuned using PMUs Data,” *IEEE Transactions on Smart Grid*, 9(6):6666–6673, November 2018.
- Deepjyoti Deka, Sriram Vishwanath, and Ross Baldick, “Topological vulnerability of power grids to disasters: Bounds, adversarial attacks and reinforcement,” *PLOS One*, 13(10), October 2018.
- Ross Baldick, “Incentive properties of coincident peak pricing,” *Journal of Regulatory Economics*, 54(2):165–194, October 2018.

- Mahir Sarfati, Mohammad Hesamzadeh, Darryl Biggar, and Ross Baldick, “Probabilistic Pricing of Ramp Service in Power Systems with Wind and Solar Generation,” *Renewable & Sustainable Energy Reviews*, 90:851–862, July 2018.
- Morgan T. Kelley, Richard C. Pattison, Ross Baldick, and Michael Baldea, “An MILP framework for optimizing demand response operation of air separation units,” *Applied Energy*, 222:951–966, July 2018.
- Amin Kargarian, J. Mohammadi, J. Guo, Sambuddha Chakrabarti, M. Barati, G. Hug, S. Kar, and Ross Baldick, “Toward Distributed/Decentralized DC Optimal Power Flow Implementation in Future Electric Power Systems,” *IEEE Transactions on Smart Grid*, 9(4):2574–2594, July 2018.
- Hunyoung Shin, Duehee Lee, and Ross Baldick, “An Offer Strategy for Wind Power Producers that Considers the Correlation between Wind Power and Real-Time Electricity Prices,” *IEEE Transactions on Sustainable Energy*, 9(2):695–706, April 2018.
- Bowen Hua, Ross Baldick, and Jianhui Wang, “Representing Operational Flexibility in Generation Expansion Planning Through Convex Relaxation of Unit Commitment,” *IEEE Transactions on Power Systems*, 33(2):2272–2281 March 2018.
- Hunyoung Shin and Ross Baldick, “Mitigating Market Risk for Wind Power Providers Via Financial Risk Exchange,” *Energy Economics*, 71:344–358, March 2018.
- Morgan T. Kelley, Richard C. Pattison, Ross Baldick, and Michael Baldea, “An efficient MILP framework for integrating nonlinear process dynamics and control in optimal production scheduling calculations,” *Computers and Chemical Engineering*, 110:35–52, February 2018.
- Javad Lavaei, Steven Low, Ross Baldick, Baosen Zhang, Daniel Molzahn, Florian Dörfler, Henrik Sandberg, “Guest Editorial Distributed Control and Efficient Optimization Methods for Smart Grid,” *IEEE Transactions on Smart Grid*, 8(6):2939–2940, November 2017.
- Daniel K. Molzahn, Florian Dörfler, Henrik Sandberg, Steven H. Low, Sambuddha Chakrabarti, Ross Baldick, and Javad Lavaei, “A Survey of Distributed Optimization and Control Algorithms for Electric Power Systems,” *IEEE Transactions on Smart Grid*, 8(6):2941–2962, November 2017.
- Mohammad Majidi-Qadikolai and Ross Baldick, “A Generalized Decomposition Framework for Large-Scale Transmission Expansion Planning,” *IEEE Transactions on Power Systems*, 33(2):1635–1649, March 2018.
- Yibo Lin, Xiaoqing Xu, Bei Yu, Ross Baldick, and David Pan, “Triple/Quadruple Patterning Layout Decomposition via Novel Linear Programming and Iterative Rounding,” *the Journal of Micro/Nanolithography, MEMS, and MOEMS (JM3)*, 16(2), 2017.
- Deepjyoti Deka, Sriram Vishwanath, and Ross Baldick, “Analytical Models for Power Networks: The case of the Western U.S. and ERCOT grids,” *IEEE Transactions on Smart Grid*, 8(6):2794–2802, November 2017.
- Heejung Park and Ross Baldick, “Integration of compressed air energy storage systems co-located with wind resources in the ERCOT transmission system,” *Electrical Power and Energy Systems*, 90:181–189, September 2017.
- Bowen Hua and Ross Baldick, “A convex primal formulation for convex hull pricing,” *IEEE Transactions on Power Systems*, 32(5):3814–3823, September 2017.

- Hunyoung Shin and Ross Baldick, “Plug-In Vehicle to Home (V2H) Operation under a Grid Outage,” *IEEE Transactions on Smart Grid*, 8(4):2032–2041, July 2017.
- Tong Zhang and Ross Baldick, “Consideration of Existing Capacity in Screening Curve Method,” *IEEE Transactions on Power Systems*, 32(4):3038–3048, July 2017.
- Ramtin Madani, Javad Lavaei, and Ross Baldick, “Constraint Screening for Security Analysis of Power Networks,” *IEEE Transactions on Power Systems*, 32(3):1828–1838, May 2017.
- Yaser Tohidi, Mohammad Reza Hesamzadeh, Ross Baldick, Darryl R. Biggar, “Transmission network switching for reducing market power cost in generation sector: A Nash-equilibrium approach,” *Electric Power Systems Research*, 146:71–79, May 2017.
- Duehee Lee and Ross Baldick, “Load and Wind Power Scenario Generation through the Generalized Dynamic Factor Model,” *IEEE Transactions on Power Systems*, 32(1):400–410, January 2017.
- Heejung Park and Ross Baldick, “Multi-year Stochastic Generation Capacity Expansion Planning Under Environmental Energy Policy,” *Applied Energy*, 183:737–745, December 2016.
- Mohammad Majidi-Qadikolai and Ross Baldick, “Stochastic Transmission Capacity Expansion Planning With Special Scenario Selection for Integrating $N - 1$ Contingency Analysis,” *IEEE Transactions on Power Systems*, 31(6):4901–4912, November 2016.
- Ji Hoon Yoon, Ross Baldick, and Atila Novoselac, “Demand response control of residential HVAC loads based on dynamic electricity prices and economic analysis,” *Science and Technology for the Built Environment*, 22(6):705–719, 2016.
- Vassilis Kekatos, Liang Zhang, Georgios B. Giannakis, and Ross Baldick, “Voltage Regulation Algorithms for Multiphase Power Distribution Grids,” *IEEE Transactions on Power Systems*, 31(5):3913–3923, September 2016.
- Jin Hur and Ross Baldick, “A new merit function to accommodate high wind power penetration of WGRs (wind generating resources),” *Energy*, 108:34–40, August 2016.
- Vassilis Kekatos, Georgios B. Giannakis, and Ross Baldick, “Online Energy Price Matrix Factorization for Power Grid Topology,” *IEEE Transactions on Smart Grid*, 7(3):1239–1248, May 2016.
- Mohammad Majidi-Qadikolai and Ross Baldick, “Integration of $N - 1$ Contingency Analysis with Systematic Transmission Capacity Expansion Planning: ERCOT Case Study,” *IEEE Transactions on Power Systems*, 31(3):2234–2245, May 2016.
- Yuzhong Gong, Quanyuan Jiang, and Ross Baldick, “Ramp Event Forecast based Wind Power Ramp Control with Energy Storage System,” *IEEE Transactions on Power Systems*, 31(3):1831–1844, May 2016.
- G. Morales-España, R. Baldick, J. García-González, and A. Ramos, “Power-capacity and Ramp-capability Reserves for Wind Integration in Power-based UC,” *IEEE Transactions on Sustainable Energy*, 7(2):614–624, April 2016.
- Yezhou Wang, Chen Chen, Jianhui Wang and Ross Baldick, “Research on Resilience of Power Systems under Natural Disasters—A Review,” *IEEE Transactions on Power Systems*, 31(2):1604–1613, March 2016.

- Heejung Park, Ross Baldick, and David P. Morton, “A Stochastic Transmission Planning Model With Dependent Load and Wind Forecasts,” *IEEE Transactions on Power Systems*, 30(6):3003–3011, November 2015.
- David P. Tuttle and Ross Baldick, “Technological, Market and Policy Drivers of Emerging Trends in the Diffusion of Plug-in Electric Vehicles in the U.S.,” *The Electricity Journal*, 28(7):29–43, August–September 2015.
- Hector Chavez, Duehee Lee, and Ross Baldick, “CPS1-Compliant Regulation Using a PSD Analysis of Wind Expansion in a Single Balancing Authority,” *IEEE Transactions on Sustainable Energy*, 6(3):976–983, July 2015.
- Hector Chavez, Ross Baldick, and Julia Matevosyan, “The Joint Adequacy of AGC and Primary Frequency Response in Single Balancing Authority Systems,” *IEEE Transactions on Sustainable Energy*, 6(3):959–966, July 2015.
- Mahdi Kefayati and Ross Baldick, “Optimal Policies for Simultaneous Energy Consumption and Ancillary Service Provision for Flexible Loads under Stochastic Prices and No Capacity Reservation Constraint,” *International Journal of Control*, 88(7):1326–1337, July 2015.
- Tong Zhang, Ross Baldick, and Thomas Deetjen, “Optimal Generation Capacity Expansion Using a Further Improved Screening Curves Method,” *Electric Power Systems Research*, 124:47–54, July 2015.
- Heejung Park and Ross Baldick, “Stochastic Generation Capacity Expansion Planning Reducing Greenhouse Gas Emissions,” *IEEE Transactions on Power Systems*, 30(2):1026–1034, March 2015.
- Yezhou Wang and Ross Baldick, “Interdiction Analysis of Electric Grids Combining Cascading Outage and Medium-Term Impacts,” *IEEE Transactions on Power Systems*, 29(5):2160–2168, September 2014.
- Ji Hoon Yoon, Ross Baldick, and Atila Novoselac, “Demand response for residential buildings based on dynamic price of electricity,” *Energy and Buildings*, 80:531–541, September 2014.
- Hector Chavez, Ross Baldick, and Julia Matevosyan, “CPS1 Compliance-constrained AGC Gain Determination for a Single-balancing Authority,” *IEEE Transactions on Power Systems*, 29(3):1481–1488, August 2014.
- Hector Chavez, Ross Baldick, and Sandip Sharma, “Governor Rate-constrained OPF for Primary Frequency Control Adequacy,” *IEEE Transactions on Power Systems*, 29(3):1473–1480, August 2014.
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- Manuel Garcia, Ross Baldick, and Felipe Wilches-Bernal, “Primary Frequency Response Reserve Products for Inverter-Based Resources,” Proceedings of *Hawaii International Conference on System Sciences*, January 3–7, 2022.
- Ross Baldick, Shmuel S. Oren, Eric S. Schubert, and Kenneth Anderson, “ERCOT: Success (so far) and lessons learned,” In Jean-Michel Glachant, Paul L. Joskow, and Michael G. Pollitt, Editors, *Handbook on Electricity Markets*, pages 205–241, Edward Elgar, 2021.
- Bing Huang, Arezou Ghesmati, Yonghong Chen, Ross Baldick, and Rui Bo, “Pumped Storage Optimization in Day-ahead and Real-time Market under Uncertainty,” Presented at the FERC Technical Conference, Washington, DC, June 22, 2021.
- Manuel Garcia, Felipe Wilches-Bernal, and Ross Baldick, “Primary Frequency Response Reserve Requirements with Application to ERCOT,” Presented at the FERC Technical Conference, Washington, DC, June 23, 2021.
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- Ross Baldick, “Texas extreme weather February 2021,” Presented at *Sustainable Energy Policy Cluster Roundtable*, Griffith University, Queensland, Australia, March 19, 2021; IEEE Power and Energy Society, University of California, Berkeley Chapter Meeting, March 30, 2021; Energy Club of Spain, April 19, 2021; Institute for Climate, Energy & Disaster Solutions, Australian National University, April 20, 2021; Stanford Smart Grid seminar, April 22, 2021; Tenaga Nasional Berhad webinar, April 23, 2021; IAEE Webinar, June 17, 2021; PowerTech Conference, Madrid, June 29, 2021; Keynote, IEEE PES Innovative Smart Grid Technologies Latin America (ISGT-LA), Lima, Peru, September 16, 2021; Keynote, Melbourne Energy Institute Symposium 21, Melbourne, Australia, December 3, 2021; Power & Energy and Industry Applications Societies Webinar, IEEE Kansas City Chapters, May 3, 2022; and University of Minnesota Center for Electric Energy Webinar, July 12, 2022.
- Ross Baldick, Yonghong Chen, and Bing Huang, “Optimization formulations for storage devices,” Presented at *The 4th Georgia Tech Workshop on Energy Systems and Optimization*, Atlanta, GA, December 10–11, 2020.
- Ross Baldick, Panelist at *ACER workshop on CONE and RS methodologies*, European Union, December 3, 2020.
- M. Majidi and R. Baldick, “Definition and Theory of Transmission Network Planning,” In Mohammad Reza Hesamzadeh, Juan Rosellón, and Ingo Vogelsang, Editors, *Transmission Network Investment in Liberalized Power Markets*, pages 17–68, Springer 2020.
- Ross Baldick, “The role of sector coupling in renewable integration,” Presented at *2020 MIT A+B Applied Energy Symposium Going Virtual*, August 13–14, 2020.
- Germán Morales-España, Ross Baldick, Javier García-González, Andres Ramos, “Power-Capacity and Ramp-Capability Reserves for Wind Integration in Power-Based UC,” Presented at the *IEEE Power & Energy Society General Meeting*, 2021.

- Ross Baldick, “An Increased Role for the Demand Side in Renewable Integration,” Presented at IEEE PES/IAS/PELS/IES Austin Chapter Meeting, May 26, 2020, European Energy Market Conference, Stockholm, Sweden, September 18–20, 2020, and IEEE PES General Meeting, July 25–29, 2021.
- Morgan Kelley, Ross Baldick, and Michael Baldea, “A discrete multiple shooting formulation for efficient dynamic optimization,” Presented at *the 30th European Symposium on Computer Aided Process Engineering (ESCAPE30)*, May 24–27, 2020.
- J. Xu and R. Baldick, “A New Peak-Electricity-Price Forecasting Method based on Artificial Neural Network,” Presented at *IEEE Sustainable Power & Energy Conference*, Beijing, China, November 21–23, 2019.
- Ross Baldick, “Sector Coupling,” Presented at the *Future Electricity Markets Summit*, Sydney, Australia, November 18–20, 2019.
- Les Stanaland, Ross Baldick, Alvaro Cardenas, and Jennifer Holmes, “Protecting the Texas electric grid: A cybersecurity strategy for ERCOT and the PUCT,” Presented at *ResWeek*, San Antonio, TX, November 4–7th, 2019.
- Bing Huang, Alvaro Cardenas, and Ross Baldick, “Not Everything is Dark and Gloomy: Power Grid Protections Against IoT Demand Attacks,” Presented at the *28th USENIX Security Symposium*, Santa Clara, CA, August 14–16, 2019.
- Bing Huang and Ross Baldick, “A Configuration Based Energy Storage Model in MISO Day-Ahead Market,” Presented at the *IEEE PES General Meeting*, Atlanta, GA, August 4–8, 2019.
- Tong Zhang, Ross Baldick, and Thomas Deetjen, “Generation Planning Using a Modified Screening Curve Method to Account for Planned Outage,” Proceedings of the *IEEE PES General Meeting*, Atlanta, GA, August 4–8, 2019.
- Manuel Garcia, Ross Baldick, and Shams Siddiqi, “A General Economic Dispatch Problem with Marginal Losses” Proceedings of *American Control Conference*, Philadelphia, PA, July 10–12, 2019.
- Jian Xu and Ross Baldick, “Day-Ahead Price Forecasting in ERCOT Market Using Neural Network Approaches,” Proceedings of the *Tenth ACM International Conference on Future Energy Systems (e-Energy 19)*, Phoenix, AZ, June 25–28, 2019.
- Manuel Garcia and Ross Baldick, “Real-Time Co-Optimization: Interdependent Reserve Types for Primary Frequency Response,” Proceedings of the *Tenth ACM International Conference on Future Energy Systems (e-Energy 19)*, Phoenix, AZ, June 25–28, 2019.
- Sang Woo Park, Richard Zhang, Javad Lavaei, and Ross Baldick, “Monotonicity Between Phase Angles and Power Flow and Its Implications for the Uniqueness of Solutions,” Proceedings of *Hawaii International Conference on System Sciences*, Maui, HI, January 8–11, 2019.
- Byungchul Kim and Ross Baldick, “Adaptive Energy Management System With A BESS Through Experimental-Based Cell Modeling and Adaptive Model Predictive Control,” Presented at *IEEE PES ISGT Asia*, Singapore, May 22–25, 2018.
- Bing Huang, Mohammad Majidi, and Ross Baldick, “Case Study of Power System Cyber Attack Using Cascading Outage Analysis Model,” Proceedings of the *IEEE PES General Meeting*, Portland, OR, August 5–9, 2018.

- Mohammad Majidi-Qadikolai, Cris Urena, and Ross Baldick, “Optimization-based Approaches for practical transmission expansion planning studies: ERCOT case studies,” Proceedings of the *IEEE PES General Meeting*, Portland, OR, August 5–9, 2018.
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- Ross Baldick, “Balancing Diversification and Reliability,” panel session moderator, University of Texas Energy Week, Austin, TX, January 30, 2018.
- Ross Baldick and Bowen Hua, “Improved Approximations to Convex Hull Prices,” Presented at the *Harvard Electricity Policy Group Meeting*, Palm Beach, FL, January 25–26, 2018.
- Ross Baldick and Resmi Surendran, “Electricity Markets,” Chapter 21, Wayne Beaty and Surya Santoso (Editors), *Standard Handbook for Electrical Engineers*, 17th Edition, McGraw Hill, 2018.
- Richard Zhang, Javad Lavaei, and Ross Baldick, “Spurious Critical Points in Power System State Estimation,” Proceedings of the *Hawaii International Conference on System Sciences*, January 2018.
- Ross Baldick, “Incentive properties of coincident peak pricing,” Florence School of Regulation, European University Institute, Florence, Italy, November 14, 2017; School of Electrical and Information Engineering, University of Sydney, Australia, August 1, 2018.
- Bowen Hua and Ross Baldick, “Pricing in Multi-Interval Real-Time Markets, Presented at the *INFORMS Annual Meeting*, Houston, TX, October 22–25, 2017.
- Duehee Lee, Ross Baldick, and Jaehyung Roh, “Distributed Ensemble Solar Power Forecasting Through The Generalized Dynamic Factor Model,” Presented at the *INFORMS Annual Meeting*, Houston, TX, October 22–25, 2017.
- Jeff Manning and Ross Baldick, “A Multi-sensor Feedback Estimator for Forecasting Variability in Local Area Photovoltaic Power Generation,” Presented at the *INFORMS Annual Meeting*, Houston, TX, October 22–25, 2017.
- Juan Andrade, Yingzhang Dong, and Ross Baldick, “Effect of market changes on the required amounts of frequency regulation ancillary services in ERCOT,” Florence School of Regulation, European University Institute, Florence, Italy, October 19, 2017; Department of Electrical and Computer Engineering, University of Texas at San Antonio, October 26, 2018.
- Abhi Ojha, Vassilis Kekatos, and Ross Baldick, “Solving the Natural Gas Flow Problem using Semidefinite Program Relaxation,” Proceedings of the *IEEE PES General Meeting*, Chicago, IL, July 16–20, 2017.
- Juan Andrade, Ross Baldick, and Yingzhang Dong, “Analysis of ERCOT regulation-up and regulation-down operational reserves,” Proceedings of the *IEEE Texas Power and Engineering Conference*, College Station, TX, February 9–10, 2017.

- Ross Baldick, “Evolving ISO Market Design: TX, CA, NY, and Mexico,” panel session moderator, University of Texas Energy Week, Austin, TX, February 7–8, 2017.
- Juan Andrade and Ross Baldick, “Dynamic Electric Transmission Expansion considering time development uncertainty,” Presented at *INFORMS Computing Society Conference*, Austin, TX, January 15–17, 2017.
- Ramtin Madani, Javad Lavaei, and Ross Baldick, “Power System State Estimation and Bad Data Detection by Means of Conic Relaxation,” Proceedings of the *Hawaii International Conference on System Sciences*, January 2017.
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- Ramtin Madani, Morteza Ashraphijuo, Javad Lavaei, and Ross Baldick, “Power System State Estimation with a Limited Number of Measurements,” Proceedings of the *55th IEEE Conference on Decision and Control*, Las Vegas, NV, December 12–14, 2016.
- Juan Andrade, Yingzhang Dong, and Ross Baldick, “Ancillary services in the context of the full cost of electricity project,” Presented at: *Workshop on Architecture and Economics of the Future Grid*, Texas A&M University, College Station, TX, November 4, 2016.
- Ross Baldick, “Renewable Integration in the ERCOT System,” Presented at: *U.S. State Department Electricity Workshop*, University of Texas at Austin, September 12, 2017, and New South Wales Government Division of Energy, Water and Portfolio Strategy, Sydney, Australia, July 26, 2018.
- Ross Baldick, “Mitigate market power to improve market efficiency,” In Hong Cheng, *Power Grid Operation in a Market Environment: Economic Efficiency and Risk Mitigation*, Chapter 2, pages 43–66, IEEE Press, Piscataway, NJ, 2016.
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- Ramtin Madani, Javad Lavaei, and Ross Baldick, “On Minimal Characterization of Feasible Sets of Security-constrained Unit-commitment Problems,” Presented at *INFORMS International Conference*, Waikoloa, HI, June 12–15, 2016.
- Mohammad Majidi-Qadikolai and Ross Baldick, “Stochastic Transmission Expansion Planning (TEP) with $N - 1$ Contingency Analysis for large-scale network,” Presented at *INFORMS International Conference*, Waikoloa, HI, June 12–15, 2016.
- Duehee Lee and Ross Baldick, “Wind variability and impact on markets,” Invited presentation at *Wind Farms*, Dallas, TX, May 23–25, 2016; IEEE PES/IAS/PELS/IES Austin Chapter Meeting, September 27, 2016; Keynote, Berlin Conference on Energy and Electricity Economics (BELEC 2016), Germany, October 13, 2016; Workshop on Architecture and Economics of the Future Grid, Texas A&M University, College Station, TX, November 4, 2016; Florence School of Regulation, European University Institute, Florence, Italy, November 9, 2017; Penn State University Energy and Environmental Economics and Policy Seminar, April 24, 2019; University of Melbourne, Australia, October 7, 2019; IEEE Big Data Analysis: Tutorial Series: Big Data & Analytics for Power Systems Webinar, January 24, 2019; University of California, Santa Cruz, Electrical

and Computer Engineering Webinar, April 20, 2020; IEEE PES Melbourne, FL, Distinguished Lecture Webinar, November 17, 2020; IEEE PES Oregon, Distinguished Lecture Webinar, December 1, 2020; IAEE Webinar, March 8, 2021.

- Ross Baldick, “Research in energy systems,” Pontificia Universidad Católica de Chile, Santiago, Chile, May 18, 2016.
- Bowen Hua and Ross Baldick, “A convex primal formulation for convex hull pricing,” Presented at *Control at Large Scales: Energy Markets and Responsive Grids*, Institute for Mathematics and its Applications Workshop, Minneapolis, MN, May 9–13, 2016; Pontificia Universidad Católica de Chile, Santiago, Chile, May 19, 2016; Transatlantic Infraday, Washington, DC, November 10, 2016; ICES Seminar-Babuska Forum Series, University of Texas at Austin, May 5, 2017; *INFORMS Annual Meeting*, Houston, TX, October 22–25, 2017; ECE departmental colloquium, Cornell University, Ithaca, NY, September 24, 2018; ISyE departmental seminar, Georgia Tech, Atlanta, GA, February 6, 2019.
- Mohammad Majidi-Qadikolai and Ross Baldick, “Screening Algorithms for Constraint Reduction in Large-Scale Stochastic Transmission Capacity Expansion Planning,” Poster presented at *IEEE PES T&D Conference & Exposition*, Dallas, TX, May 2–5, 2016.
- Duehee Lee and Ross Baldick, “Probabilistic Wind Power Forecasting based on the Laplace Distribution and Golden Search,” Proceedings of *IEEE PES T&D Conference & Exposition*, Dallas, TX, May 2–5, 2016.
- Ross Baldick, “Meeting Worldwide Demand for Electricity,” Invited presentation, *Innovators, Engineers, and Entrepreneurs*, Austin, TX, February 26, 2016.
- Ross Baldick, “Introduction to Organized Electricity Markets,” Invited presentation, *Texas–California–Wisconsin Control Consortium*, Austin, TX, February 22–23, 2016.
- Yibo Lin, Xiaoqing Xu, Bei Yu, Ross Baldick, and David Z. Pan, “Triple/Quadruple Patterning Layout Decomposition via Novel Linear Programming and Iterative Rounding,” *SPIE International Symposium on Advanced Lithography Conference*, San Jose, CA, February 21–25, 2016.
- Ross Baldick, “De-carbonizing the grid,” panel session moderator, University of Texas Energy Week, Austin, TX, February 16–19, 2016.
- Deepjyoti Deka, Ross Baldick, and Sriram Vishwanath, “Jamming aided Generalized Data Attacks: Exposing Vulnerabilities in Secure Estimation,” Proceedings of *Hawaii International Conference on System Sciences (HICSS)*, Kauai, HI, January 5–8, 2016.
- Ramtin Madani, Javad Lavaei, and Ross Baldick, “Convexification of Power Flow Problem over Arbitrary Networks,” Proceedings of *54th Conference on Decision and Control*, Osaka, Japan, December 15–18, 2015.
- Deepjyoti Deka, Ross Baldick, and Sriram Vishwanath, “Optimal Data Attacks on Power Grids: Leveraging Detection & Measurement Jamming,” Proceedings of *IEEE International Conference on Smart Grid Communications (SmartGridComm)*, Miami, FL, November 2–5, 2015.
- Hunyoung Shin and Ross Baldick, “Plug-in Vehicle to Home (V2H) Operation under a Grid Outage,” Presented at *INFORMS Annual Meeting*, Philadelphia, PA, November 1–4, 2015.

- Mahdi Kefayati and Ross Baldick, “Ancillary Services Potential of Plug-in Electric Vehicle Charging,” Presented at *INFORMS Annual Meeting*, Philadelphia, PA, November 1–4, 2015.
- Bowen Hua and Ross Baldick, “Interdiction Analysis of Coupled Electricity and Natural Gas Networks,” Presented at *INFORMS Annual Meeting*, Philadelphia, PA, November 1–4, 2015.
- Mohammad Majidi-Qadikolai and Ross Baldick, “Large Scale Transmission Capacity Expansion Planning Under N-1 Contingency Analysis,” Presented at *INFORMS Annual Meeting*, Philadelphia, PA, November 1–4, 2015.
- Sambuddha Chakrabarti, Matt Kraning, Eric Chu, Ross Baldick, and Stephen Boyd, “Computational Look-Ahead SCOPF via ADMM,” Presented at *INFORMS Annual Meeting*, Philadelphia, PA, November 1–4, 2015.
- Mohammad Majidi-Qadikolai and Ross Baldick, “Reducing the number of candidate lines for high level Transmission Capacity Expansion Planning under uncertainties,” Proceedings of the *47th North American Power Symposium (NAPS)*, Charlotte, NC, October 4–6, 2015.
- Manuel Garcia, Annarita Giani, Ross Baldick, “Smart Grid Data Integrity Attacks: Observable Islands,” Proceedings of *IEEE PES General Meeting*, Denver, CO, July 26–30, 2015.
- Tong Zhang and Ross Baldick, “Consideration of ancillary services in Screening Curve Method,” Proceedings of *IEEE PES General Meeting*, Denver, CO, July 26–30, 2015.
- Deepjyoti Deka, Ross Baldick, and Sriram Vishwanath, “One Breaker is Enough: Hidden Topology Attacks on Power Grids,” Proceedings of *IEEE PES General Meeting*, Denver, CO, July 26–30, 2015.
- Mohammad Majidi-Qadikolai, Ross Baldick, “Reducing the candidate line list for practical integration of switching into power system operation,” Presented at the *22nd International Symposium on Mathematical Programming*, Pittsburgh, PA, July 12–17, 2015.
- Javad Lavaei, Ramtin Madani, and Ross Baldick, “Convexification of Power Flow Problem over Arbitrary Networks,” Proceedings of *CORS/INFORMS International Conference*, Montreal, Canada, June 14–17, 2015.
- Ross Baldick and Stephen Littlechild, “Achievements and lessons of a major transmission expansion program: The Competitive Renewable Energy Zones (CREZ) project in Texas, working paper, June 2015.
- Ross Baldick, “Stitching seams with different threads: US versus EU electricity markets,” *Berlin Conference on Energy and Electricity Economics (BELEC 2015)*, Berlin, Germany, May 28–29, 2015; IEEE PES/IAS/PELS/IES Austin Chapter Meeting, September 22, 2015; Florence School of Regulation, European University Institute, Florence, Italy, October 12, 2017; RSE, Milan, Italy, October 30, 2017; Los Alamos National Laboratory, Santa Fe, NM, March 30, 2018; Cambridge University, Cambridge, England, May 17, 2018.
- Deepjyoti Deka, Ross Baldick, and Sriram Vishwanath, “Data Attacks on the Power Grid DESPITE Detection,” Proceedings of *IEEE Conference on Innovative Smart Grid Technologies (ISGT)*, Washington, DC, February 17–20, 2015.

- Ross Baldick, “The Future of Electricity Generation and Utilities,” Panel Session, University of Texas Energy Week, February 16–20, 2015, Austin, Texas.
- Yezhou Wang and Ross Baldick, “A case study of improved cascading outage analysis model,” Poster presented at *Grid Science Winter School & Conference*, Los Alamos National Lab, Santa Fe, NM, January 12–16, 2015.
- Ross Baldick, “Flexibility and Availability: Can the Natural Gas Supply Support These Needs?” *IEEE Power and Energy Magazine*, 12(6):104–101, November–December 2014.
- Ross Baldick, “Electric vehicle charging and transmission and distribution infrastructure,” Keynote speech, *Trans-Atlantic Infraday*, Washington, DC, November 7, 2014.
- Vassilis Kekatos, Georgios B. Giannakis, and Ross Baldick, “Grid Topology Identification using Electricity Prices,” In session on Best Conference Papers on Power System Analysis and Modeling, *Proceedings of the IEEE PES General Meeting*, Washington, DC, July 27–31, 2014.
- Duehee Lee, Jinho Lee, and Ross Baldick, “Wind Power Scenario Generation for Stochastic Wind Power Generation and Transmission Expansion Planning,” *Proceedings of the IEEE Power and Energy Society General meeting*, Washington, DC, July 27–31, 2014.
- Deepjyoti Deka, Ross Baldick, and Sriram Vishwanath, “Data Attack on Strategic Buses in the Power Grid: Design and Protection,” *Proceedings of the IEEE PES General Meeting*, Washington, DC, July 27–31, 2014.
- Mahdi Kefayati and Ross Baldick, “Anticipative Charging of Plug-in Electric Vehicles and Its Impact on the Grid,” *Proceedings of the IEEE Transportation Electrification Conference and Expo (iTEC)*, Dearborn, Michigan, June 15–18, 2014.
- Deepjyoti Deka, Ross Baldick, and Sriram Vishwanath, “Attacking Power Grids with Secure Meters: the case for Breakers and Jammers,” *IEEE INFOCOM’2014 Workshop*, Toronto, Canada, April 27–May 2, 2014.
- Sambuddha Chakrabarti, Matt Kraning, Eric Chu, Ross Baldick, and Stephen Boyd, “Security Constrained Optimal Power Flow via Proximal Message Passing,” *Proceedings of the 13th Clemson University IEEE Power Systems Conference*, Clemson, South Carolina, March 11–14, 2014.
- Ross Baldick, “Overview of Restructured Electricity Markets: Locational Marginal Pricing,” *ONR/NSF faculty/industry workshop on electric energy systems curriculum*, Napa, California, February 7–9, 2014.
- Deepjyoti Deka, Ross Baldick, and Sriram Vishwanath, “Optimal Hidden SCADA Attacks on Power Grid: A Graph Theoretic Approach,” *International Conference on Computing, Networking and Communications (ICNC)*, Honolulu, Hawaii, February 3–6, 2014.
- Ross Baldick, “Implementation and Testing of PEV Charging Strategies on Testbed,” Invited Project Presentation, Industrial Advisory Board Meeting, NSF Industry/University Cooperative Research Center on Electric Vehicle: Transportation and Electricity Convergence, December 12, 2013 and April 16, 2014.
- Mahdi Kefayati and Ross Baldick, “On Optimal Operation of Storage Devices under Stochastic Market Prices,” *Proceedings of the IEEE 52nd Annual Conference on Decision and Control (CDC)*, Florence, Italy, December 10–13, 2013.
- Ross Baldick, “Recent Trends in the Texas Market,” Keynote presentation, *Berlin Conference on Electricity Economics*, Berlin, Germany, October 9–11, 2103.

- Yezhou Wang and Ross Baldick, “Interdiction Analysis of Electric Grids combining cascading outage and medium term impacts,” Presented at the *INFORMS Annual Meeting*, Minneapolis, Minnesota, October 6–9, 2013.
- Mahdi Kefayati and Ross Baldick, “Scheduling Flexible Loads in Multi-settlement Electricity Markets,” Presented at the *INFORMS Annual Meeting*, Minneapolis, Minnesota, October 6–9, 2013.
- Ross Baldick, “Evolution ERCOT: Meaning of generation adequacy with wind and demand response,” *Gulf Coast Power Association Annual Fall Conference and Exhibition*, Austin, Texas, October 1-2, 2013.
- Parviz Adib, Jay Zarnikau, and Ross Baldick, “Texas Electricity Market: Getting Better,” in Fereidoon P. Sioshani, Editor, *Evolution of Global Electricity Markets*, Academic Press, 2013.
- Manho Joung, Ross Baldick, and Tarjei Kristiansen, “Generator Ownership of Financial Transmission Rights and Market Power,” In Juan Rosellon and Tarjei Kristiansen, Editors, *Financial Transmission Rights: Analysis, Experiences and Prospects*, pages 129–156, Springer, 2013.
- Duehee Lee and Ross Baldick, “Synthesis of sample paths of wind power through factor analysis and cluster analysis,” Proceedings of the *North American Power Symposium (NAPS)*, Manhattan, Kansas, September 22-24, 2013.
- Yezhou Wang and Ross Baldick, “Case study of an improved Cascading Outage Analysis model using outage checkers,” *Proceedings of the IEEE Power and Energy Society General Meeting*, Vancouver, BC, Canada, July 21–25, 2013.
- IEEE Cascading Outage Task Force, (Yezhou Wang, Ross Baldick, *et al.*), “Mitigation and Prevention of Cascading Outages: Methodologies and Practical Applications,” *Proceedings of the IEEE Power and Energy Society General Meeting*, Vancouver, BC, Canada, July 21–25, 2013.
- Heejung Park, Ross Baldick, and David P. Morton, “A Stochastic Transmission Planning Model with Dependent Random Variables: Wind and Load,” Presented at the *13th International Conference on Stochastic Programming*, Bergamo, Italy, July 8–12, 2013.
- Heejung Park and Ross Baldick, “A Two-stage Stochastic Transmission Planning Model for Multivariate Wind Farms and Load,” Presented at the *26th EURO INFORMS*, Rome, Italy, July 1–4, 2013.
- Mahdi Kefayati and Ross Baldick “PEV Demand Flexibility and its Impact on the Electric Power System,” Presented at the *IEEE Transportation Electrification Conference and Expo (iTEC)*, Detroit, Michigan, June 16–19, 2013.
- David P. Tuttle, Robert L. Fares, Ross Baldick, and Michael E. Webber, “Plug-In Vehicle to Home (V2H) Duration and Power Output Capability,” Presented at the *IEEE Transportation Electrification Conference and Expo (iTEC)*, Detroit, Michigan, June 16–19, 2013.
- Yin Wu, Edward Bourgeau, and Ross Baldick, “Enhanced Active Heave Compensation Control Design for New Riser Hybrid Tensioning System in Deepwater Drilling,” *Proceedings of the International Conference on Ocean, Offshore and Arctic Engineering*, Nantes, France June 9–14, 2013.
- Ross Baldick, “In praise of slow charging,” University of Texas at Arlington, May 6, 2013.

- Ross Baldick and Mahdi Kefayati, “Harnessing Electric Vehicle Demand Flexibility: Energy and Power are the Keys,” Keynote speech, *Center for Transportation Research Annual Symposium*, University of Texas, Austin, Texas, April 3, 2013.
- Ross Baldick, “Systematic optimization of transmission expansion and transmission charges based on benefits,” Invited presentation, *Systems and Optimization Aspects of Smart Grid Challenges*, Tucson, Arizona, March 21-23, 2013.
- Ross Baldick, “DC Power Flow in Rectangular Coordinates,” Invited presentation, *DI-MACS workshop on Energy Infrastructure*, Rutgers University, New Brunswick, New Jersey, February 20–22, 2013, and *Systems and Optimization Aspects of Smart Grid Challenges*, Tucson, Arizona, March 21–23, 2013.
- Mahdi Kefayati and Ross Baldick, “Harnessing Electric Vehicle Demand Flexibility,” Invited presentation, the Department of Electrical, Computer, and Energy Engineering, Arizona State University, February 27, 2013; the Department of Electrical and computer Engineering, University of California, San Diego, March 20, 2013; Fujitsu Labs America, Sunnyvale, California, April 26, 2013; the *Iowa State University NSF EPSCoR Energy Policy Seminar*, May 1, 2013; Stanford SmartGrid Seminar, Stanford University, February 6, 2014; University of Buffalo, Department of Electrical Engineering, March 28, 2014; and Instituto de Investigación Tecnológica, Universidad Pontificia Comillas, Madrid, Spain, May 9, 2014.
- Mahdi Kefayati and Ross Baldick, “On Energy Delivery to Delay-averse Flexible Loads: Optimal Algorithm, Consumer Value and Network Level Impacts,” *Proceedings of the IEEE 51st Annual Conference on Decision and Control (CDC)*, 2401–2408, Maui, HI, 10–13 December 2012.
- Duehee Lee, Joonhyun Kim, and Ross Baldick, “Controlling Ramp Rates of Wind Power Output Using a Storage System and Pattern Matching Forecasting,” Presented at the *31st USAEE/IAEE North American Conference*, Austin, TX, November 4–7, 2012.
- Mansoureh Peydayesh and Ross Baldick, “The Effects of Very Fast Response to Frequency Fluctuation,” Presented at the *31st USAEE/IAEE North American Conference*, Austin, TX, November 4–7, 2012.
- Ross Baldick, “Electricity Market Design,” Plenary Panel, *31st USAEE/IAEE North American Conference*, Austin, Texas, November 4–7, 2012.
- Yezhou Wang and Ross Baldick, “Cascading Outage Analysis using Sequential Outage Checkers,” Presented at *Engineering Conferences International (ECI): Modeling, Simulation, And Optimization for the 21st Century Electric Power Grid*, Lake Geneva, Wisconsin, October 21–25, 2012.
- Mahdi Kefayati and Ross Baldick, “Localized Charging Policies for Greener Transportation Electrification,” Presented at the *INFORMS Annual Meeting*, Phoenix, AZ, October 14–17, 2012.
- Heejung Park and Ross Baldick, “Integration of Renewable Energy in Texas,” Presented at *Next Generation of Researchers in Power Systems*, Madrid, Spain, October 3–6, 2012.
- Mahdi Kefayati and Ross Baldick, “Harnessing Demand Flexibility to Match Renewable Production Using Localized Policies,” *Proceedings of the 50th Annual Allerton Conference on Communication, Control, and Computing*, pages 1105–1109, Allerton, IL, October 1–5, 2012.

- Duehee Lee and Ross Baldick, “Analyzing the variability of wind power output through the power spectral density,” *Proceedings of the Power and Energy Society General Meeting*, San Diego, California, July 22–26, 2012.
- Jin Hur and Ross Baldick, “Spatial Prediction of Wind Farm Outputs Using the Augmented Kriging-based Model,” *Proceedings of the IEEE Power and Energy Society General Meeting*, San Diego, California, July 22–26, 2012.
- Yin Wu, Edward Bourgeau and Ross Baldick, “A New Safety and Stability Enhanced Riser Control System - An Integrated Hybrid Riser Tensioning System,” *Proceedings of the International Conference on Ocean, Offshore and Arctic Engineering*, Rio de Janeiro, Brazil, July 1–6, 2012.
- Ross Baldick, “Current perspectives and analysis on Competitive Renewable Energy Zones,” *Texas Power Markets Conference*, Houston, Texas, June 12-13, 2012.
- Mahdi Kefayati and Ross Baldick, “Harnessing Demand Flexibility to Match Renewable Production and Provide Ancillary Services,” Presented at: the *32nd CNLS Annual Conference, Optimization and Control for Smart Grids*, Santa Fe, New Mexico, May 21-25, 2012; and *Workshop on SmartGrid*, University of Melbourne, Australia, July 5–6, 2012.
- Duehee Lee, Ross Baldick, and Peter Son, “Limiting ramp rates of the wind power output using a battery system,” Presented at the *IEEE/PES Transmission and Distribution Conference*, Orlando, May 7–10, 2012.
- Ross Baldick, “Resource Adequacy in ERCOT: Perspectives on current ERCOT design and potential changes,” *Gulf Coast Power Association Resource Adequacy Workshop*, Austin, Texas, May 4, 2012.
- Hector Chavez and Ross Baldick, “Inertia and Governor Ramp Rate Constrained Economic Dispatch to Assess Primary Frequency Response Adequacy,” Presented at the *International Conference on Renewable Energies and Power Quality (ICREPQ'12)*, Santiago de Compostela, Spain, March 28–30, 2012.
- Duehee Lee and Ross Baldick, “Limiting Ramp Rate of Wind Power Output using a Battery based on the Variance Gamma Process,” *International Conference on Renewable Energies and Power Quality (ICREPQ'12)*, Santiago de Compostela, Spain, March 28–30, 2012.
- Ross Baldick, “The Curious Rise of Wind in Texas,” Keynote presentation at *International Ruhr Energy Conference (INREC)*, Essen, Germany, March 6–7, 2012; Keynote presentation at *EEM13, the 10th International Conference on the European Energy Market*, May 27–31, 2013, Stockholm, Sweden.
- Michael Chertkov, Mikhail Stepanov, Feng Pan, and Ross Baldick, “Exact and efficient algorithm to discover extreme stochastic events in wind generation over transmission Power Grids,” Presented at the *50th IEEE Conference on Decision and Control and European Control Conference*, Orlando, Florida, December 12–15, 2011.
- Heejung Park and Ross Baldick, “Stochastic Transmission Planning for Wind Integration Using Conditional Probability,” Presented at *INFORMS Annual Meeting*, Charlotte, NC, November 13–16, 2011.
- Mahdi Kefayati and Ross Baldick, “Energy Delivery Transaction Pricing for flexible electrical loads,” *Proceedings of the IEEE International Conference on Smart Grid Communications*, pages 363–368, Brussels, Belgium, October 17–20, 2011.

- Ross Baldick, “Minimum uplift assignment of transmission expansion costs to beneficiaries,” *Proceedings of the 49th Annual Allerton Conference on Communication, Control, and Computing*, pages 1286–1293, Monticello, Illinois, September 28–30, 2011. Also presented at: the Department of Integrated Systems Engineering, The Ohio State University, Columbus, Ohio, February 8, 2012; Instituto de Investigación Tecnológica, Universidad Pontificia Comillas, Madrid, Spain, March 21, 2012; and Federal Energy Regulatory Commission meeting on *Electricity Optimization: Optimal Power System Topologies and Generation*, November 8, 2012.
- Ross Baldick, “Scarcity Pricing for Long-Term Reliability and Resource Availability,” Invited Presentation, *Public Utility Commission of Texas workshop on Resource Adequacy and Shortage Pricing*, Austin, Texas, June 30, 2011.
- Ross Baldick, “Competitive performance of ERCOT’s wholesale market: The future of the energy-only market,” *Texas Public Policy Foundation’s Electricity Summit*, Austin, Texas, December 9, 2010.
- Ross Baldick, “Gas and renewables: Policies, integration, and costs,” *University of Texas Center for Energy Economics Gas Forum*, Houston, Texas, December 1, 2010.
- Yen-Yu Lee, Ross Baldick, and Jin Hur, “Firm-based Measurements of Market Power in Transmission-Constrained Electricity Markets,” Presented at Department of Industrial and Enterprise Systems Engineering, University of Illinois at Urbana-Champaign, November 1, 2010, and *INFORMS 2010*, Austin, TX, November 9, 2010.
- Integration of variable resources: future,” *Gulf Coast Power Association 25th Annual Fall Conference and Exhibition*, Austin, Texas, September 29–29, 2010.
- “Different technologies for different applications,” Gulf Coast Power Association Energy Storage Workshop, Austin, Texas, September 27, 2010.
- Ross Baldick, “Computing the Electricity Market Equilibrium: Uses of market equilibrium models,” In Xiao-Ping Zhang, Editor, *Computing the Electricity Market Equilibrium*, IEEE Press and Wiley, 2010. Also presented at: the IEEE Power Engineering Society Power Systems Conference and Exposition, Atlanta, Georgia, October 29–November 1, 2006; the Department of Automation, Tsinghua University, Beijing, China, April 7, 2007; the Electrical and Electronic Engineering Department, The University of Hong Kong, April 27, 2007; PSR, Rio de Janeiro, Brazil, March 17, 2009; at the Universidad Industrial de Santander, Colombia, March 20, 2009; and Instituto de Investigación Tecnológica, Universidad Pontificia Comillas, Madrid, Spain, March 23, 2012.
- Ross Baldick, “Market power, market power mitigation, and efficiency,” Presented at the *IEEE Power and Energy Society General Meeting*, Minneapolis, Minnesota, July 25–29, 2010.
- Ross Baldick, “Alternatives for ancillary services pricing,” Presented to California ISO, July 10, 2010.
- Ross Baldick (Convenor) “The future of the electricity industry,” Austin, Texas, June 10, 2010. Available from http://lifelong.engr.utexas.edu/shortcourse.cfm?course_num=1292.
- Judy Chang, Kamen Madjarov, Ross Baldick, Antonio Alvarez, and Philip Q. Hanser, “Renewable Integration Model and Analysis,” *Proceedings of the IEEE Transmission and Distribution Conference and Exposition*, New Orleans, LA, April 2010.
- Ross Baldick, “The impact of electricity markets and pricing on renewables,” Presented at *2010 Wind, Solar and Renewables*, Austin, TX, February 3–4, 2010.

- Cheol Hee Cho and Ross Baldick, “Augmented screening curve approach to optimizing generation capacity additions considering reserves,” Presented at Instituto de Investigación Tecnológica, Universidad Pontificia Comillas, Madrid, Spain, October 14, 2009. Also presented at: *Energy, Sustainability and Climate Change 2010*, Gainesville, FL, February 26–28, 2010; and *INFORMS 2010*, Austin, TX, November 7, 2010.
- Ross Baldick, “Wind and Energy Markets: A Case Study of Texas,” Presented at the Energy Retailers Association of Australia Briefing on *The Expanded Renewable Energy Target: Can our markets cope?* Sydney, Australia, August 10, 2009. Also presented at: the *Workshop on Renewable Energy Integration*, The University of New South Wales, Sydney, Australia, August 17, 2009; Instituto de Investigación Tecnológica, Universidad Pontificia Comillas, Madrid, Spain, September 24, 2009; Universidad de Castilla, La Mancha, Toledo campus, October 2, 2009; Judge Business School, Cambridge University, October 12, 2009; Department of Electrical and Computer Engineering, Iowa State University, November 16, 2009; *Harvard Electricity Policy Group Meeting*, Cambridge, MA, May 21, 2010; *INFORMS 2010*, Austin, TX, November 8, 2010; Macroeconomics Workshop, Department of Economics, Rice University, September 24, 2012; Invited presentation, IEEE Power and Energy Chapter, Austin (PES/PELS/IAS/IES), Austin, Texas, Tuesday, September 24, 2013; and workshop presentation, *Berlin Conference on Electricity Economics*, Berlin, Germany, October 9–11, 2103.
- Ross Baldick and Hui Niu, “Recent History of Electricity Market Restructuring in Texas,” Presented at Instituto de Investigación Tecnológica, Universidad Pontificia Comillas, Madrid, Spain, September 14, 2009.
- Ross Baldick, “Wind Energy and Electricity Markets,” Presented at the *National Academy of Engineering Regional Meeting*, College Station, Texas, April 29, 2009. Also presented at the University of Minnesota Internet-based seminar, June 8, 2009.
- Ross Baldick, “Locational Marginal Pricing,” Presentation to Public Utility Commission of Texas, Commissioner Kenneth Anderson and colleagues, April 2009.
- Cascading Outage Task Force, (Ross Baldick, Badrul Chowdhury, *et al.*), “Vulnerability Assessment for Cascading Failures in Electric Power Systems,” *Proceedings of the IEEE Power Systems Conference and Exposition*, Seattle, Washington, March 15–18, 2009.
- Ross Baldick, “Single Clearing Price in Electricity Markets,” Report, available from <http://users.ece.utexas.edu/~baldick/papers/baldick-single-price-auction.pdf>, February 2009.
- Manho Joung, Ross Baldick, and J. Kim, “Strategic Behavior in Electricity Capacity Markets,” *Proceedings of the Hawaii International Conference on System Sciences (HICSS-42)*, Waikoloa, Hawaii, January 2009.
- Ross Baldick, Mladen Kezunovic, and Ivan Damnjanovic, “PHEVs as Dynamically Configurable Dispersed Energy Storage,” Power Systems Engineering Research Center 2008 IAB Meeting, College Station, Texas, December 2008.
- Ross Baldick, “Myth: Nodal pricing is bad for wind,” Presented at the *Texas Renewable Energy Industries Association Fall 2008 Conference*, Austin, Texas, November 2008
- Lin Xu and Ross Baldick, “Stability of Supply Function Equilibrium in Electricity Markets under Piecewise Linear Function Perturbations,” *Proceedings of the 46th Annual Allerton Conference on Communication, Control, and Computing*, Monticello, Illinois, October 24–25, 2008.

- Ross Baldick, “Electric Economics and Wind,” Presented to the Central Texas Association for Energy Economics, Austin, Texas, October 2008
- Ross Baldick and Lin Xu, “Theory and application of transmission-constrained residual demand derivative in electricity markets,” Invited Presentation, Visiting speaker series, Department of Economics, University of Guelph, September 19, 2008.
- Ross Baldick and Michael Caramanis, “Using Controlled PEV Charging to Enhance Wind Energy,” Presented at the *Workshop on the Role of Plug In Hybrid Electric Vehicles*, Austin, Texas, August 18–19, 2008.
- Ross Baldick, Badrul Chowdhury, *et al.* “Initial Review of Methods for Cascading Failure Analysis in Electric Power Systems,” *Proceedings of the 2008 IEEE Power Engineering Society General Meeting*, Pittsburgh, Pennsylvania, July 20–24, 2008.
- Manuel Hernandez, Lin Xu, Steven Puller, and Ross Baldick, “Tools for Assessing Offers into Electricity Auctions,” Presented at the Power Systems Engineering Research Center Meeting, Ames, Iowa, May 14–16, 2008. Also, keynote presentation at The *Seoul International Conference on Electricity Markets*, Seoul, South Korea, June 18–20, 2008.
- Ross Baldick (Convenor) “ERCOT Energized: The good, the bad, and the ugly of the new Texas Nodal Market Design,” Austin, Texas, May 2, 2008. Presentations available from <http://lifelong.engr.utexas.edu/ercot/schedule.cfm>.
- Manho Joung and Ross Baldick, “Moral Hazard in Electricity Capacity Markets,” Presented at the *Fourth Annual Carnegie Mellon Conference on the Electricity Industry: Future Energy Systems: Efficiency, Security, Control*, Pittsburgh, Pennsylvania, March 2008.
- Ross Baldick, “ERCOT Transition to Nodal Markets—The Basics for Lawyers,” Presented at the *Institute for Energy Law, Power and Alternative Energy Conference*, Houston, Texas, April 22, 2008. Also presented at: the Wind Energy Institute 2008, Austin, Texas, February 19, 2008 and to the Texas Commission on Environmental Quality, June 23, 2008.
- Javier Salmeron, Kevin Wood, and Ross Baldick, “Vulnerability of Electric Power Grids,” Invited Presentation, IEEE Columbus, Ohio, PES Meeting, November 19, 2007. Also presented at: IEEE Austin, Texas, PES Meeting, September 25, 2012, IEEE Charleston, South Carolina, PES Meeting, March 23, 2015, PJM webinar, October 21, 2019, MISO webinar, November 21, 2019, CAISO webinar, January 7, 2020.
- Ross Baldick, Ashley Brown, James Bushnell, Susan Tierney, and Terry Winter, “A National Perspective On Allocating the Costs of New Transmission Investment: Practice and Principles,” White Paper prepared for WIRES, the Working group for Investment in Reliable and Economic Electric Systems September 2007.
- Ross Baldick, “Border flow rights and contracts for differences of differences: Models for electric transmission property rights,” *Power Systems Engineering Research Center Teleseminar*, May 1, 2007. Also presented at the Graduate Power Seminar, Arizona State University, September 21, 2007; the *2008 INFORMS Annual Meeting*, Washington, DC, October 12–15, 2008; and the Universidad Industrial de Santander, Colombia, March 19, 2009.
- Lin Xu and Ross Baldick, “Supply Function Dynamics, Equilibrium, and Local Stability Analysis in Electricity Markets,” Presented at the *2006 INFORMS General Meeting*, Pittsburgh, November 4–8, 2006.

- Ross Baldick, “Applied Optimization: Formulation and Algorithms for Engineering Systems,” Presented at the *2006 INFORMS General Meeting, Pittsburgh*, November 4–8, 2006.
- Ross Baldick, “Upcoming Changes to the Texas Wholesale Electricity Market,” Presented at the Department of Electrical Engineering, The University of New South Wales, Australia, July 20, 2006.
- Richard O’Neill, Udi Helman, Benjamin Hobbs, and Ross Baldick, “Independent system operators in the United States: History, lessons learned, and prospects.” In F. P. Sioshansi and W. Pfaffenberger, Editors, *International Experience in Restructured Electricity Markets: What works, what does not, and why?* Elsevier, 2006.
- Ross Baldick, “Market Power Mitigation,” *Gulf Coast Power Association Meeting*, September 2005
- Hui Niu and Ross Baldick, “An Empirical Analysis of Market Efficiency,” *Proceedings of the 2005 IEEE Power Engineering Society General Meeting*, San Francisco, June 2005.
- Ross Baldick, Krishnan Dixit, and Thomas Overbye, “Empirical Analysis of the Variation of Distribution Factors with Loading,” *Proceedings of the 2005 IEEE Power Engineering Society General Meeting*, San Francisco, California, June 2005. Also presented at the University of New South Wales, Australia, August 2003.
- Ross Baldick, “Decomposition and coordination of large-scale power systems,” Presented at the National Science Foundation workshop on seams issues, Arlington, Virginia, October 2004. Also presented at the 2005 IEEE Power Engineering Society General Meeting panel on “Inter-regional Market Coordination,” June 2005.
- Ross Baldick, “Economic Dispatch,” Presentation to The Texas House Committee on Regulated Industries, September 24, 2004.
- Ross Baldick, “Electricity for Telecom Lawyers,” Presented at the Texas Bar Public Utility Law Section Annual Meeting, August 20, 2004.
- Ross Baldick and Hui Niu, “Lessons Learned: The Texas Experience.” In James Griffin and Steven Puller, Editors, *Electricity Deregulation: Where to from here?* University of Chicago Press, 2005. Presented at Bush School of Government and Public Service, Texas A&M University, College Station, Texas, April 4, 2003.
- Ross Baldick, “Reactive Issues: Reactive power in restructured markets,” *IEEE Power and Energy Magazine*, 2(6):14–17, November/December 2004.
- Ross Baldick, “Decomposition and coordination of large-scale power systems,” Presented at the National Science Foundation workshop on seams issues, Arlington, Virginia, October 2004. Also presented at the 2005 IEEE Power Engineering Society General Meeting panel on “Inter-regional Market Coordination,” June 2005.
- Stathis Tompaiddis, Ross Baldick, and Sergey Kolos, “Valuation and Optimal Interruption for Interruptible Electricity Contracts,” *INFORMS Annual Meeting*, Atlanta, October 2003.
- Ross Baldick, “Market-based transmission: Property rights meet Kirchhoff,” Presented at the *2003 IEEE PES Transmission and Distribution Conference and Exposition*, Dallas, Texas, September 7–12, 2003.
- Ross Baldick, “Shift Factors in ERCOT Congestion Pricing,” Technical Report, March 2003. Presented at the Public Utility Commission of Texas, January 14, 2003.

- M. Milosevic, L. F. C. Pessoa, B. L. Evans, and R. Baldick, “DMT Bit Rate Maximization With Optimal Time Domain Equalizer Architecture,” Invited Paper, *IEEE Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, November 2002.
- You Seok Son, Ross Baldick, Kwang Ho Lee, and Shams Siddiqi, “Multi-unit Auctions with Market Power: Uniform and Pay-as-bid Pricing in an Electricity Market,” Presented at the 22nd USAEE/IAEE North American Conference Vancouver, British Columbia, October 6-8, 2002.
- Ross Baldick, “Power Grid Concerns: Energy Fueling the Tech Sector” Technology Advisors Group, Austin, Texas, August 30, 2002.
- Ross Baldick, “Grid Limitations,” Presented at the President’s Council of Advisors on Science and Technology Distributed Energy Workshop, University of Texas at Austin, August 15, 2002.
- Ross Baldick and William Hogan, “Stability of supply function equilibria: Implications for daily versus hourly bids in a poolco market,” *Proceedings of the Seventh Annual POWER Research Conference*, University of California Energy Institute, Berkeley, CA, March 2002. Also presented at: Australian Bureau of Agricultural and Resource Economics, Canberra, Australia May 17, 2002; the Department of Electrical Engineering, The University of New South Wales, Australia, May 22, 2002; the University of Wisconsin at Madison, October 2001; Department of Economics, University of Paris XI, France, October 2002; and Department of Electrical Engineering, The University of Chile, November 2005.
- Debabrata Chattopadhyay and Ross Baldick, “Unit Commitment With Probabilistic Reserve,” *Proceedings of 2002 IEEE Power Engineering Society Winter Meeting*, New York, NY, January 2002, 1:280–285.
- Ross Baldick and William Hogan, “Capacity Constrained Supply Function Equilibrium Models of Electricity Markets: Stability, Non-decreasing Constraints, and Function Space Iterations,” University of California Energy Institute POWER Paper PWP-089, www.ucei.berkeley.edu/ucei/PDF/pwp089.pdf, December 2001, Revised September 2002.
- Ross Baldick, “An Electric Power Research Agenda for Texas,” Invited presentation, Texas Conservative Forum Fall Conference on Texas’ Role in the National Energy Policy, September 2001.
- Shih-Yih Lai and Ross Baldick, “Buffered Interconnect Tree Optimization Using Lagrangian Relaxation,” *Proceedings of the International Conference on Computer Design*, Austin, Texas, September 23–26, 2001, pages 199-206.
- Ross Baldick, “Transmission key to avoiding California-style blackouts in Texas,” *Austin American-Statesman*, July 2001.
- Ross Baldick, “Supply Function versus Cournot Equilibrium Models in Electricity Markets,” Invited Presentation, INFORMS Annual Meeting, San Antonio, November 2000.
- Ross Baldick, Ryan Grant, and Edward P. Kahn, “Linear Supply Function Equilibrium: Generalizations, Application, and Limitations,” University of California Energy Institute POWER Paper PWP-078, www.ucei.berkeley.edu/ucei/PDF/pwp078.pdf, August 2000. Presented at the Harvard Electricity Policy Group, Cambridge, MA, October 2000. Also presented at the Department of Electrical and Computer Engineering, The University of Wisconsin at Madison, October 2000; INFORMS Annual Meeting, San

Antonio, November 5-8 2000; the Department of Electrical and Computer Engineering, The University of Washington, Seattle, March 2001; Department of Electrical Engineering, University of Chile, November 2005; Universidad Industrial de Santander, Colombia, March 20, 2009; and Instituto de Investigación Tecnológica, Universidad Pontificia Comillas, Madrid, Spain, March 23, 2012.

- Bogdan Tutuianu, Daksh Lehther, Madhulima Pandey, and Ross Baldick, “Efficient RLC Macromodels for Digital IC Interconnect,” Proceedings of the *Tenth International Conference on Very Large Scale Integration (VLSI '99)*, December 1-4, 1999, Lisboa, Portugal, In Luis Miguel Silveira, Srinivas Devadas, Ricardo Reis, Editors, *VLSI: Systems on a Chip*, pages 293–305, Springer, 2000.
- Ross Baldick, “Developing Economic Signals to Deal with Congestion and Parallel Path Issues Between RTOs,” *Proceedings of INFOCAST Conference*, Orlando, Florida, December 1999.
- Ross Baldick, “Alternative formulations, multiplicity of solutions, and unpriced products,” DIMACS/EPRI Workshop on The Next Generation of Unit Commitment Models, Rutgers University, Piscataway, New Jersey, September 27–28, 1999.
- Ross Baldick, “Coordination of large scale power systems,” *Proceedings of 1999 IEEE Power Engineering Society Winter Meeting*, 1999, 2(626).
- Ross Baldick, “Capacity Benefit Margin,” Presented at the FERC Technical Conference on Capacity Benefit Margin, Washington, DC, May 1999.
- Ross Baldick, Andrew B. Kahng, Andrew Kennings, and Igor L. Markov, “Function Smoothing with Applications to VLSI Layout,” *Proceedings of the Design Automation Conference*, Hong Kong, January 1999, 1(225-228).
- Ross Baldick, “Coordination by Tie-line Decomposition,” Invited Presentation at the Special Session of the Harvard Electricity Policy Group on Regional Boundaries, Regional Markets and Regional Institutions, Milwaukee, Wisconsin, November 20, 1998.
- Ross Baldick, “IPPs get VAMMoed in Texas,” In Georges Zaccour, *Deregulation of Electric Utilities*, pages 1–23, Kluwer Academic Publishers, Boston, 1998.
- Ross Baldick, “Independent System Operators,” Invited Presentation at the Sixth Seminar on Restructuring Issues, Louisiana State University, September 1997.
- Xiaohong Guan, Ross Baldick, and W.-H. Edwin Liu, “Integrating Power System Scheduling and Optimal Power Flow,” *Proceedings of the 12th Power Systems Computation Conference*, Dresden, Germany, 19–23 August, 1996, pages 717–723.
- N. Menezes, R. Baldick, and L. Pileggi, “A Sequential Quadratic Programming Approach to Concurrent Gate and Wire Sizing,” *Proceedings of the International Conference on Computer-Aided Design*, November 7–10, 1995, pages 144–151.
- C. A. Goldman, J. F. Busch, E. P. Kahn, R. Baldick, and A. Milne, “Review of Consolidated Edison’s Integrated Resource Bidding Program,” Report LBL-33599, Energy Analysis Program, Lawrence Berkeley Laboratory, July 1993.
- Ross Baldick and Edward Kahn, “Network Costs and the Regulation of Wholesale Competition in Electric Power,” Presented at the Western Economic Association International 68th Annual Conference, Lake Tahoe, Nevada, June 20–24, 1993.
- Ross Baldick and Edward Kahn, “Transmission Planning in the Era of Integrated Resource Planning: A Survey of Recent Cases,” Report LBL-32231, Energy Analysis Program, Lawrence Berkeley Laboratory, September 1992.

- Ross Baldick and Edward Kahn, “Regulation and Transmission Planning for Electric Power,” Advanced Workshop in Regulation and Public Utility Economics, Fifth Annual Western Conference, San Diego, California, July 8–10, 1992.
- Ross Baldick, “Coordination of Distribution System Capacitors and Regulators: An Application of Integer Quadratic Optimization.” In C. T. Leondes, *Control and Dynamic Systems, Volume 42: Analysis and Control System Techniques for Electric Power Systems*, pages 245–291, Academic Press, Inc., San Diego, 1991.
- Ross Baldick, “Optimal On-Off Control of Capacitors in a Distribution System,” Master’s Report, University of California, Berkeley, May 1988.

Awards, Scholarships, and Honors

- 2023 IEEE Power and Energy Society Technical Committee Outstanding Technical Report Award, “Security Constrained Unit Commitment for Electricity Market: Modeling, Solution Methodology and Future Challenges,” (with Yonghong Chen and others).
- 2021 IEEE Power and Energy Society PSOPE Technical Committee Prize Paper Award, “Representing Operational Flexibility in Generation Expansion Planning Through Convex Relaxation of Unit Commitment,” (with Bowen Hua and Jianhui Wang).
- Best Conference Papers Session on Power System Modeling, Analysis, and Planning, *IEEE PES General Meeting*, Atlanta, GA, August 4–8, 2019, “Generation Planning Using a Modified Screening Curve Method to Account for Planned Outage,” (with Tong Zhang and Thomas Deetjen).
- University of Texas Faculty Research Assignment, Fall 2017.
- Franco Cerrina Memorial Best Student Paper Award, *SPIE International Symposium on Advanced Lithography Conference*, San Jose, CA, February 21–25, 2016, “Triple/Quadruple Patterning Layout Decomposition via Novel Linear Programming and Iterative Rounding,” (with Yibo Lin, Xiaoqing Xu, Bei Yu, and David Z. Pan.)
- IEEE (PI)² Austin Texas Chapter Outstanding Engineer Award (Power and Energy Society, Power Electronics Society, Industry Applications Society, Industrial Electronics Society), 2015.
- IEEE PES Outstanding Power Engineering Educator Award 2015.
- Best Conference Papers Session on Cyber Security, Stability, and Protection, *IEEE PES General Meeting*, Denver, CO, July 26–30, 2015, “One Breaker is Enough: Hidden Topology Attacks on Power Grids,” (with Deepjyoti Deka and Sriram Vishwanath.)
- Best Conference Papers Session on Power System Analysis and Modeling, *IEEE PES General Meeting*, Washington, DC, July 27–31, 2014, “Grid Topology Identification using Electricity Prices,” (with Vassilis Kekatos and Georgios B. Giannakis.)
- Erasmus Mundus scholar, 2009.
- University of Texas Faculty Research Assignment, Fall 2009.
- Technical Committee Program Coordinator, *IEEE Power Engineering Society General Meeting*, 2008.
- Fellow of the Institute of Electrical and Electronics Engineers, 2007, citation “for contributions to analysis of power system economics.”

- IEEE Power Engineering Society, Power System Analysis, Computing, and Economics Technical Committee Prize Paper Award, 2006 (with Richard P. O'Neill, Udi Helman, Michael H. Rothkopf, and William Stewart, Jr.)
- Best Presentation in Energy Sponsored Sessions Award, INFORMS Conference, Atlanta, Georgia, October 2003 (with Stathis Tompaidis and Sergey Kolos).
- Leland Barclay Fellowship in Engineering, 2003–2019.
- Associate Editor, *IEEE Transactions on Power Systems*, 2004–2010.
- Visiting Researcher, University of California Energy Institute, June–August 2000, July–August 2001, June–August 2002, and June–July 2003.
- Research Fellow, Harvard Electricity Policy Group, John F. Kennedy School of Government, Harvard University, September–December 2000.
- University of Texas Faculty Research Assignment, Fall 2000.
- Engineering Foundation Faculty Award, University of Texas at Austin, 1997.
- Non-Resident Tuition Scholarship, University of California, 1990.
- Non-Resident Tuition Scholarship, University of California, 1989.
- Regents Fellowship/Edward J. Norcross Fellowship, University of California, 1988–1989.
- James King of Irawang Scholarship, University of Sydney, Australia, 1988.
- Semi-finalist, Honeywell Futurist Essay Competition, 1988.
- Regents Fellowship, University of California, 1987–1988.
- Distinguished Pass, Ph.D. Preliminary Exams, 1987.
- James King of Irawang Scholarship, University of Sydney, Australia, 1987.
- Regents Fellowship, University of California, 1986–1987.
- J. B. Watt Travelling Scholarship, University of Sydney, Australia, 1986–1989.

Research Funding

- “Modeling and Optimization of Pumped Storage in a Multi-Stage Large Scale Electricity Market under Portfolio Evolution,” DOE, \$90,000, November 2019–August 2021.
- “Reliable and Massively Scalable Grid Optimization via Low-complexity Convex Relaxation,” ARPA-E, \$50,000, August 2019–February 2020.
- “Support for 2019 Austin Electricity Conference,” Sloan Foundation, \$10,000, April 2019.
- “Support for 2018 Austin Electricity Conference,” Sloan Foundation, \$10,000, April 2018.
- “Unit Commitment with Combined Cycle Units,” Mid-Continent ISO, \$100,000, August 2017–December 2019.
- “Optimizing Demand-side Participation of Chemical Process,” Department of Energy, \$360,000, September 1, 2016–August 31, 2019.
- “CRISP Type 1: Collaborative Research: Lessons Learned from Decades of Attacks against Critical Interdependent Infrastructures,” National Science Foundation, \$98,357, January 2016–December 2019.
- “Collaborative Research: Representation of post-contingency states in dispatch optimization,” National Science Foundation, \$200,000, September 2014–December 2019.

- “Understanding Dynamic Interactions Post-WMD Attack in Interdependent Networks,” Defense Threat Reduction Agency, \$1,400,000, June 2014–December 2019.
- “Defending Interdependent Infrastructure Systems,” Defense Threat Reduction Agency, \$1,270,008, August 2010–August 2017.
- “Implementation and Testing of PEV Charging Strategies on Testbed,” EV-TEC, \$80,000, September 2013–August 2015.
- “Principles based modeling of costs of integrating intermittent renewable generation,” \$359,667, September 2011–August 2015.
- “IGERT: Sustainable Grid Integration of Distributed and Renewable Resources,” National Science Foundation, \$3,070,531, September 2010–August 2015.
- “Techno-economic Modeling of the Integration of 20% Wind and Large Scale Energy Storage in ERCOT,” Department of Energy, \$501,668, March 2010–September 2012.
- “Collaboration between The University of Texas at Austin, Department of Electrical and Computer Engineering and ERCOT,” Electric Reliability Council of Texas, \$550,000, January 2010–October 2014.
- “PEVs as Dynamically Configurable Dispersed Energy Storage,” Power Systems Engineering Research Center, \$70,000, July 2009–August 2011.
- “Transocean Power Plant Analysis and Modeling Initiative,” Transocean Offshore Deepwater Drilling, Inc., \$128,000, September 2008–June 2011.
- “Tools for Assessment of Transmission-Constrained Market Power in Electricity Markets,” National Science Foundation Research Grant, \$200,000, August 2008–July 2011.
- “Tools for Assessment of Bidding into Electricity Auctions,” Power Systems Engineering Research Center, \$60,000, July 2006–August 2008.
- “Reducing the Vulnerability of Electric Power Grids to Terrorist Attacks,” Department of Energy Research Grant, \$241,500, July 2005–June 2007.
- “Transmission Constrained Supply Function Equilibrium Analysis of Electric Power Markets,” National Science Foundation Research Grant, \$120,000, September 2004–August 2006.
- “Analysis and Simulation of Strategic Behavior and Price Processes in Transmission Constrained Electricity Markets,” National Science Foundation Research Grant, \$100,000, 2000–2002.
- Optimal Power Flow Software, Donated by Decision Systems International, \$50,000, 1996.
- Wattsim, Operator Training Simulator Software, Donated by Incremental Systems, Inc, \$100,000, 1995.
- “Integration of Institutional and Technical Issues in Electric Transmission,” University Research Institute Summer Research Award, \$11,000, 1995.
- National Science Foundation Young Investigator Award, \$300,000, 1994–2000.
- National Science Foundation Research Initiation Award, \$95,000, 1993–1998.

Professional Society Memberships

- IEEE Power and Energy Society, Former chair of System Economics Subcommittee of Power Systems Analysis, Computing and Economics Committee.

- SIAM.
- INFORMS.
- IAEE/USAEE.