

Joseph F. DeCarolis

jdecarolis@gmail.com | (919) 656-2531 | www.linkedin.com/in/jfdecarolis/

Leadership Experience

Internationally recognized energy leader focused on the development of sustainable energy solutions. Experience leading change at the highest levels of U.S. government combined with deep technical expertise in energy systems, climate change, computing, and public policy. Leading advocate for open source models to inform decision making. Excel at building diverse teams to find problem-driven solutions to the most challenging energy and environmental issues. Highly effective organizational leadership, financial and people management, and targeted communications to inform stakeholders on complex research topics.

Professional Experience

Professor

NC State University, Raleigh, NC

2008-present

- Built a successful interdisciplinary, energy-focused research program.
- Co-led the creation of a faculty cluster focused on sustainable energy systems and policy.
- Led the NC State Energy Collaborative, a campus-wide effort focused on collaborating, developing, sharing, and communicating energy-related research and teaching.
- Led the 20-member Environmental, Water Resources, and Coastal Engineering group within the Department of Civil, Construction, and Environmental Engineering to develop consensus-based solutions to student recruitment and curriculum issues.
- Co-led a collaborative, multi-institutional effort to develop an Open Energy Outlook for the United States, with 30+ researchers participating from institutions spanning the United States and Europe.
- Developed a Python-based open source energy system model focused on transparency and quantifying future uncertainty; currently being used in both North America and Europe.
- Performed technical, economic, and environmental assessments of wind power, energy storage, salinity gradient energy, ocean currents, electric drive vehicles, solar powered greenhouses, solid waste management, electronic waste recycling, and building design alternatives.
- Served on the inaugural Macro-Energy Systems steering committee, a national community of researchers focused on large-scale, systems-level, long-term aspects of energy systems and their implications for other systems, including the environment, economy, and human wellbeing.
- Taught courses focused on environmental engineering, sustainable infrastructure, energy and climate, life cycle assessment, energy modeling, and sustainable building design.

Administrator

U.S. Energy Information Administration, U.S. Dept. of Energy, Washington, DC 2022-2025

- Serving as the Senate-confirmed, Presidentially-appointed leader of the official statistical and analytical agency within the Department of Energy. Leading approximately 350 federal employees and 300 contractors with a \$135 million annual budget.

- Increased transparency by making EIA’s model code open source for the first time in the agency’s history and developing new, public-facing data dashboards.
- Initiated the development of an open source, next generation energy system model capable of addressing the most important and urgent energy questions facing our nation and the world.
- Focused on major updates to our IT infrastructure, including the construction of a new datacenter, greater use of the cloud, adoption of revision control software, and the provisioning of enterprise tools for data management and dashboard development.
- Regularly brief the U.S. Secretary of Energy; provide timely data and analysis to Congressional staff, White House staff, the broader analyst community, and the public.

Other Professional Experience

Environmental Scientist, U.S. Environmental Protection Agency, Durham, NC	2004-2008
Part-Time Instructor, Nicholas School, Duke University, Durham, NC	2005-2008
Research Assistant, Engineering and Public Policy, Carnegie Mellon, Pittsburgh, PA	2000-2004

Professional Preparation

Ph.D. Carnegie Mellon University	Engineering and Public Policy	2004
Dissertation: The Economics and Environmental Impacts of Large-Scale Wind Power in a Carbon Constrained World		
Advisor: David W. Keith		
B.A. Clark University	Physics, Environmental Science & Policy	2000

Awards and Honors

Highest Engagement Index Score on the Federal Employee Viewpoint Survey*	2024
U.S. Senate Confirmation to serve as EIA Administrator	2022
U.S. Presidential Appointment to serve as EIA Administrator	2021
Outstanding Teacher Award, NC State College of Engineering	2019
University Faculty Scholar	2018
ALCOA Foundation Research Achievement Award	2016
Whole Systems Energy Modelling Fellow, University College London	2015
ACSA/AIA Housing Design Education Award	2013
ASCE Southeastern Section, Outstanding New Teacher Award	2011
NSF CAREER Award	2010
U.S. EPA NRMRL Team Collaboration Award	2008
Phi Beta Kappa	2000

*DOE Award to EIA; given to department element with highest score with 300-1000 employees

Summary of Research Contributions

My research is driven by the need to rapidly develop sustainable energy systems. I have identified problems and worked to address them by combining domain knowledge in energy systems with numerical and mathematical modeling, life cycle assessment, and energy economics. My research is designed to deliver practical insights to decision makers on critical energy topics.

(Numbered references below drawn from publication list beginning on the next page.)

Energy system modeling. I have spent the last 15+ years advancing the state-of-the-art in energy systems modeling. Some of this work is focused on best practices regarding the development and application of models (7, 29, 33, 54). I was also an early proponent of open source models to promote transparency in policy analysis (8, 10, 12, 28, 44). My research team developed Tools for Energy Model Optimization and Analysis (Temoa), one of the first open source energy system models focused on maximizing transparency and enabling a rigorous treatment of uncertainty (14). Temoa has been applied on a wide variety of topics, including U.S. greenhouse gas emissions in the absence of new policy (32), robust pathways for U.S. deep decarbonization (57), the effect of conflict uncertainty on electricity planning in South Sudan (35), and the impact of extreme weather risks on electricity planning in Puerto Rico (48). More recently, colleagues have used Temoa to produce an [Open Energy Outlook for the United States](#). At EIA, I was the first Administrator to oversee the release of open source models, including the [National Energy Modeling System](#) and a [next generation model](#). In 2023, I refocused the [Annual Energy Outlook](#) – perhaps the most visible application of U.S. energy systems analysis – on explanatory narrative and model-based insights that consider the full range of modeled cases.

Energy technology assessment. A portion of my work has also focused on performing technical, economic, and environmental assessments of novel energy technologies. As part of my PhD, I conducted an early economic assessment of large-scale wind power (4) and contributed to a study that used general circulation models to assess the climatic impacts of wind power (3). I have also performed techno-economic assessments of ocean compressed air energy storage (22), marine current energy (30), and organic solar-powered greenhouses (55). My team was the first to perform environmental life cycle assessments of salinity gradient energy (53) and solar-powered integrated greenhouses (40). In 2018, I led a large interdisciplinary team of researchers to complete a [1-year study](#) focused on the cost and performance of various storage options for the NC General Assembly.

Solid waste management. I have also been actively involved in research focused on examining the economic and environmental impacts of solid waste management. I helped to develop an open source optimization model framework to examine different solid waste treatment options (15, 18, 34, 45) and have contributed to life cycle assessments of various solid waste processes, including waste collection (26), waste-to-energy (5), material recovery facilities (19), refused-derived fuel (17), food waste management (25), and electronic waste recovery and recycling processes (41). I have also applied inverse modeling to parametrize models used to estimate methane emissions from landfills (13, 20).

Sustainable building design. Working with colleagues in engineering and architecture, we developed and enhanced an energy assessment tool that can provide rapid feedback during the early stages of building design (9, 21, 38).

Peer-Reviewed Publications

61. *Faria, V.A., A.R. de Queiroz, J.F. DeCarolis. (2023). Scenario generation and risk-averse stochastic portfolio optimization applied to offshore renewable energy technologies. *Energy*, 270: 126946. 2023
60. *de Faria, V.A., A.R. de Queiroz, J.F. DeCarolis. (2022). Optimizing offshore renewable portfolios under resource variability. *Applied Energy*, 326: 120012. 2022
59. *Ford, L., de Queiroz, A., DeCarolis, J. and Sankarasubramanian, A., 2022. Co-Optimization of Reservoir and Power Systems (COREGS) for seasonal planning and operation. *Energy Reports*, 8: 8061-8078.
58. *Ssengonzi, J., J.X. Johnson, J.F. DeCarolis. (2022). An efficient method to estimate renewable energy capacity credit at increasing regional grid penetration levels. *Renewable and Sustainable Energy Transition*, 2: 100033.
57. *Patankar, N., *H. Eshraghi, A.R. de Queiroz, J.F. DeCarolis (2022). Using robust optimization to inform US deep decarbonization planning. *Energy Strategy Reviews*, 42: 100892.
56. *Patankar, N., H.G. Fell, A.R. de Queiroz, J. Curtis, J.F. DeCarolis. (2022). Improving the representation of energy efficiency in an energy system optimization model. *Applied Energy*, 306(Part B): 118083.
55. Ravishankar, E., R.E. Booth, *J.A. Hollingsworth, H. Ade, H. Sederoff, J.F. DeCarolis, B.T. O'Connor. (2022). Organic solar powered greenhouse performance optimization and global economic opportunity. *Energy & Environmental Science*, 15(4): 1659-1671.
54. Henry, C.L., *H. Eshraghi, O. Lugovoy, M.B. Waite, J.F. DeCarolis, D.J. Farnham, T.H. Ruggles, R.A. Peer, Y. Wu, A. de Queiroz, V. Potashnikov. (2021). Promoting reproducibility and increased collaboration in electric sector capacity expansion models with community benchmarking and intercomparison efforts. *Applied Energy*, 304: 117745. 2021
53. *Mueller, K.E., *J.T. Thomas, J.X. Johnson, J.F. DeCarolis, D.F. Call (2021). Life cycle assessment of salinity gradient energy recovery using reverse electrodialysis. *Journal of Industrial Ecology*, 25(5): 1194-1206.
52. Sioshansi, R., P. Denholm, J. Arteaga, S. Awara, S. Bhattacharjee, A. Botterud, W. Cole, A. Cortes, A. De Queiroz, J. DeCarolis, Z. Ding. (2021). Energy-storage modeling: State-of-the-art and future research directions. *IEEE transactions on power systems*, 37(2): 860-875.
51. *Eshraghi, H., A.R. de Queiroz, A. Sankarsubramanian, J. DeCarolis. (2021). Quantification of Climate-Induced Interannual Variability in Residential US Electricity Demand. *Energy*, 236: 121273.
50. *Sodano, D., J. DeCarolis, A.R. de Queiroz, J.X. Johnson. (2021). The Symbiotic Relationship of Solar Power and Energy Storage in Providing Capacity Value. *Renewable Energy*, 177: 823-832.

49. Koecklin, M.T., G. Longoria, D.Z. Fitiwi, J.F. DeCarolis, J. Curtis. (2021). Public acceptance of renewable electricity generation and transmission network developments: Insights from Ireland. *Energy Policy*, 151: 112185.
48. Bennett, J.A., C.N. Trevisan, J.F. DeCarolis, C. Ortiz-García, M. Pérez-Lugo, B.T. Etienne, A.F. Clarens. (2021). Extending energy system modelling to include extreme weather risks and application to hurricane events in Puerto Rico. *Nature Energy*, 6(3): 240-249.
47. Brown, M., S. Siddiqui, C. Avraam, J. Bistline, J. DeCarolis, *H. Eshraghi, S. Giarola, M. Hansen, P. Johnston, S. Khanal, A. Molar-Cruz. (2021). North American energy system responses to natural gas price shocks. *Energy Policy*, 149: 112046.
46. Cawthorne, D., A.R. De Queiroz, H. Eshraghi, S. Arumugam, J.F. DeCarolis, (2021). The Role of Temperature Variability on Seasonal Electricity Demand in the Southern US. *Frontiers in Sustainable Cities*, 3: 43.
45. *Jaunich, M.K, J.W. Levis, J.F. DeCarolis, M.A. Barlaz, S.R. Ranjithan. (2021). Exploring alternative solid waste management strategies for achieving policy goals. *Engineering Optimization*, 53(5): 905-918
44. DeCarolis, J.F., P. Jaramillo, J.X. Johnson, D.L. McCollum, E. Trutnevyte, D.C. Daniels, G. Akin-Olcum, J. Bergerson, S. Cho, J.H. Choi, M.T. Craig. (2020). Leveraging open-source tools for collaborative macro-energy system modeling efforts. *Joule*, 4(12): 2523-2526. 2020
43. Yue, X., *N. Patankar, J. DeCarolis, A. Chiodi, F. Rogan, J.P. Deane, B. O’Gallachoir, B. (2020). Least cost energy system pathways towards 100% renewable energy in Ireland by 2050. *Energy*, 207: 118264.
42. Bistline, J., W. Cole, G. Damato, J. DeCarolis, W. Frazier, V. Linga, C. Marcy, C. Namovicz, K. Podkaminer, R. Sims, M. Sukunta, (2020). Energy storage in long-term system models: a review of considerations, best practices, and research needs. *Progress in Energy*, 2(3): 032001.
41. *Jaunich, M., J.F DeCarolis, R. Handfield, E. Kemahlioglu-Ziya, S.R. Ranjithan, H. Moheb-Alizadeh, H. (2020). Life-cycle modeling framework for electronic waste recovery and recycling processes. *Resources, Conservation & Recycling*, 161: 104841
40. *Hollingsworth, J., E. Ravishankar, J.X. Johnson, J.F. DeCarolis. (2020) Environmental and Economic Impacts of Solar Powered Integrated Greenhouses. *Journal of Industrial Ecology*, 24 (1), 234-247.
39. *Li, B., *J. Thomas, **A.R. de Queiroz, J.F. DeCarolis. (2019) Open Source Energy System Modeling Using Break-Even Costs to Inform State-Level Policy: A North Carolina Case Study. *Environmental Science & Technology*, 54(2): 665-676. 2019
38. Rossi, M.M., Oliveira Favretto, A.P., Grassia, C., DeCarolis, J.F., Cho, S., Hill, D., Soares Chvatala, K.M., Ranjithan, R. (2019). Metamodels to Assess the Thermal Performance of Naturally Ventilated Low-cost Houses for Decision-making Support and Educational Purposes, *Energy and Buildings*, 204: 109457.

37. Sun, W., X. Wang, J.F. DeCarolis, M.A. Barlaz (2019). Evaluation of Optimal Model Parameters for Prediction of Methane Generation from Selected U.S. Landfills. *Waste Management*, 91: 120-127.
36. **de Queiroz, A.R., D. Mulcahy, J.F. DeCarolis, S. Arumugam, J. Patskoski, G. Mahinthakumar, N. Lu (2019). Repurposing an Energy System Optimization Model for Seasonal Power Generation Planning. *Energy*, 181: 1321-1330.
35. *Patankar, N., **A.R. de Queiroz, J.F. DeCarolis, M.D. Bazilian, D. Chattopadhyay. (2019). Building conflict uncertainty into electricity planning: a South Sudan case study. *Energy for Sustainable Development*, 49: 53-64.
34. *Jaunich, M.K., J.W. Levis, J.F. DeCarolis, M.A. Barlaz, S.R. Ranjithan (2019). Solid Waste Management Policy Implications on Waste Process Choices and Systemwide Cost and Greenhouse Gas Performance. *Environmental Science & Technology*, 53(4): 1766-1775.
33. X. Yue., S. Pye, J.F. DeCarolis, F. Li, F. Rogan, B. Ó Gallachóir. (2018). A Review of Approaches to Uncertainty Assessment in Energy System Models. *Energy Strategy Reviews*, 21: 204-217. 2018
32. *Eshraghi, H., **A.R. de Queiroz, J.F. DeCarolis. (2018). US Energy-Related Greenhouse Gas Emissions in the Absence of Federal Climate Policy, *Environmental Science & Technology*, 52(17): 9595-9604.
31. Galik, C., J.F. DeCarolis, H. Fell. (2017). The U.S. Mid-Century Strategy amidst Early Century Uncertainty. *Climate Policy*, 17(8): 1046-1056. 2017
30. *Li, B., J.F. DeCarolis, A.R. de Queiroz, J. Bane, R. He, A. Keeler, V. Neary. (2017). The Economics of Marine Current Energy: A Gulf Stream Case Study. *Energy*, 134: 649-658.
29. DeCarolis, J.F., H. Daly, P. Dodds, I. Keppo, F. Li, W. McDowall, S. Pye, N. Strachan, E. Trutnevte, W. Usher, M. Winning (2017). Formalizing best practice for energy system optimization modelling. *Applied Energy*, 194: 184-198.
28. Pfenninger, S., J.F. DeCarolis, L. Hirth, S. Quoilin, I. Staffell (2017). The importance of open data and software: Is energy research lagging behind? *Energy Policy*, 101: 211-215.
27. Martinez-Sanchez, V., J.W. Levis, A. Damgaard, J.F. DeCarolis, M.A. Barlaz, T.F. Astrup (2017). Evaluation of Externality Costs in Life-Cycle Optimization of Municipal Solid Waste Management Systems. *Environmental Science & Technology*, 51(6): 3119-3127.
26. *Jaunich, M.K., J.W. Levis, J.F. DeCarolis, E.V. Gaston, M.A. Barlaz, S.L. Bartelt-Hunt, E.G. Jones, L. Hauser, R. Jaikumar (2016). Characterization of municipal solid waste collection operations. *Resources, Conservation and Recycling*, 114: 92-102. 2016
25. *Hodge, K.L., J.W. Levis, J.F. DeCarolis, M.A. Barlaz (2016). A Systematic Evaluation of Industrial, Commercial, and Institutional Food Waste Management Strategies in the US. *Environmental Science & Technology*, 50(16): 8444-8452.

24. *Jaunich, M.K., J.W. Levis, M.A. Barlaz, S.R. Ranjithan, J.F. DeCarolis (2016). Lifecycle Process Model for Municipal Solid Waste Collection. *Journal of Environmental Engineering*, 10.1061/(ASCE)EE.1943-7870.0001065, 04016037.
23. DeCarolis, J. F., *S. Babae, B. Li, *S. Kanungo (2015). Modelling to generate alternatives with an energy system optimization model. *Environmental Modelling & Software*, 79: 300-310. 2015
22. *Li, B., J.F. DeCarolis (2015). A Techno-Economic Assessment of Offshore Wind Coupled to Ocean Compressed Air Energy Storage. *Applied Energy*, 155: 315-322.
21. *Al Gharably, M. , J.F. DeCarolis , S.R. Ranji Ranjithan (2015). An enhanced linear regression-based building energy model (LRBEM+) for early design. *Journal of Building Performance Simulation*, 9(2): 115-133.
20. *Wang, X., **A.S. Nagpure, J.F. DeCarolis, M.A. Barlaz (2015). Characterization of Uncertainty in Estimation of Methane Collection from Select U.S. Landfills. *Environmental Science & Technology*, 49(3): 1545–1551.
19. *Pressley, P., J.W. Levis, A. Damgaard, M.A. Barlaz, J.F. DeCarolis (2014). Analysis of material recovery facilities for use in life-cycle assessment. *Waste Management*, 35, 307-317. 2014
18. Levis, J.W., M.A. Barlaz, J.F. DeCarolis, S.R. Ranjithan (2014). Systematic Exploration of Efficient Strategies to Manage Solid Waste in U.S. Municipalities: Perspectives from the Solid Waste Optimization Life-Cycle Framework (SWOLF). *Environmental Science & Technology*, 48(7), 3625–3631.
17. *Pressley, P., T.A. Aziz, J.F. DeCarolis, M.A. Barlaz, F. He, F. Li, A. Damgaard (2014). Municipal Solid Waste Conversion to Transportation Fuels: A life-cycle estimation of global warming potential and energy consumption. *Journal of Cleaner Production*, 70: 145–153.
16. *Babae, S., **A.S. Nagpure, J.F. DeCarolis (2014). How Much Do Electric Drive Vehicles Matter to Future US Emissions? *Environmental Science & Technology*, 48(3), 1382–1390.
15. Levis, J.W., M.A. Barlaz, J.F. DeCarolis, S.R. Ranjithan (2013). A generalized multistage optimization modeling framework for life cycle assessment-based integrated solid waste management. *Environmental Modelling & Software*, 50: 51-65. 2013
14. *Hunter, K., *S. Sreepathi, J.F. DeCarolis (2013). Modeling for insight using Tools for Energy Model Optimization and Analysis (Temoa). *Energy Economics*, 40: 339-349.
13. *Wang, X., **A.S. Nagpure, J.F. DeCarolis, M.A. Barlaz (2013). Using Observed Data To Improve Estimated Methane Collection from Select U.S. Landfills. *Environmental Science & Technology*, 47(7): 3251-3257.
12. Bazilian, M., A. Rice, J. Rotich, M. Howells, J. DeCarolis, S. Macmillan, C. Brooks, F. Bauer, M. Liebreich (2012). Open source software and crowdsourcing for energy analysis. *Energy Policy*, 49: 149-153. 2012

11. Welsch, M., M. Howells, M. Bazilian, J.F. DeCarolis, S. Hermann, H.H. Rogner (2012). Modelling elements of Smart Grids – Enhancing the OSeMOSYS (Open Source Energy Modelling System) code. *Energy*, 46(1): 337-350.
10. DeCarolis, J.F., *K. Hunter, *S. Sreepathi (2012). The case for repeatable analysis with energy economy optimization models. *Energy Economics*, 34(6): 1845-1853.
9. *Hygh, J.S., J.F. DeCarolis, D.B. Hill, R. Ranjithan (2012). Multivariate Regression as an Energy Assessment Tool in Early Building Design. *Building and Environment*, 57: 165-175.
8. Howells, M., H. Rogner, N. Strachan, C. Heaps, H. Huntington, S. Kypreos, A. Hughes, S. Silveira, J. DeCarolis, M. Bazilian, A. Roehrl (2011). OSeMOSYS - The Open Source Energy Modelling System. *Energy Policy*, 39: 5850-5870. 2011
7. DeCarolis, J.F. (2011). Using modeling to generate alternatives (MGA) to expand our thinking on energy futures. *Energy Economics*, 33: 145-152.
6. Vijay, S., J.F. DeCarolis, R.K. Srivastava (2010). A bottom-up method to develop pollution abatement cost curves for coal-fired utility boilers. *Energy Policy*, 38: 2255-2261. 2010
5. Kaplan, P.O., J.F. DeCarolis, S.A. Thorneloe (2009). Is It Better to Burn or Bury Waste for Clean Electricity Generation? *Environmental Science & Technology*, 43(6): 1711-1717. 2009
4. DeCarolis, J.F. and D.W. Keith (2006). The Economics of Large Scale Wind Power in a Carbon Constrained World. *Energy Policy*, 34: 395-410. 2006
3. Keith, D.W., J.F. DeCarolis, D.C. Denkenberger, D.H. Lenschow, S.L. Malyshev, S. Pacala, and P.J. Rasch (2005). The influence of large-scale wind-power on global climate. *Proceedings of the National Academy of Sciences*, 101(46): 16115-16120. 2005
2. DeCarolis, J.F., R.L. Goble, C. Hohenemser (2000). Searching for energy efficiency on campus - Clark University's 30-year quest. *Environment*, 42(4): 8-20. 2000
1. Coffey, T., Z. Bayindir, J.F. DeCarolis, M. Bennett, G. Esper, C.C. Agosta (2000). Measuring radio frequency properties of materials in pulsed magnetic fields with a tunnel diode oscillator. *Review of Scientific Instrumentation*, 71(12): 4600-4606.

* Student co-authors

** Postdoctoral researchers under my supervision

Select Research Projects

Principal Investigator, An Open Energy Outlook for the United States Sloan Foundation	2019
Principal Investigator, Energy Storage Options for North Carolina, NC Policy Collaboratory	2018
Co-Principal Investigator, INFEWS/T3: Solar-Powered Integrated Greenhouse (SPRING) Systems Using Wavelength Selective Photovoltaics for Complete Solar Utilization, National Science Foundation	2017

Co-Principal Investigator, Collaborative REsearch of Decentralization, Electrification, Communications and Economics (CREDENCE), National Science Foundation	2017
Science Across Virtual Institutes (SAVI): International Institute for Solid Waste Management Life-Cycle Modeling	2014
Co-Principal Investigator, Cyber-Innovation for Sustainability Science and Engineering (CyberSEES Type 2): Cyber-Enabled Water and Energy Systems Sustainability Utilizing Climate Information, National Science Foundation	2014
Principal Investigator, CAREER: Modeling for Insights with an Open Source Energy Economy Optimization Model, National Science Foundation	2011
Principal Investigator, The Environmental Sustainability of Integrated Solid Waste Management in a Carbon Constrained World, National Science Foundation	2010
Co-Principal Investigator, Multiple Tiered Methodology For Micro- to Macro-Scale Assessment of Plug-In Hybrid Electric Vehicles (M4-PHEVs)	2009

Recent Keynote Talks

Stay Humble and Prepare for Surprises: Lessons for the Energy Transition, MIT Energy Initiative Fall Colloquium, Cambridge, MA, November 13, 2024

Planning our Electricity Future without a Crystal Ball, Electric Power Research Institute, Washington, DC, October 29, 2024

A Near-Term View on the Global Oil Market, Center for Strategic and International Studies, Washington, DC, March 14, 2024

Energy Data Analytics at the U.S. Energy Information Administration, Duke University, Energy Data Analytics Symposium, October 26, 2023

U.S. Energy: Where have we been and where are we headed? DOE Office of Science, EFRC-CMS-CCS Principal Investigator's Meeting, Virtual, September 18, 2023

Illuminating Energy Transition Pathways with Accessible Information and Flexible Capabilities, International Energy Workshop, Golden, CO, June 14, 2023.

Building New Capabilities at the U.S. Energy Information Administration, Wilton E. Scott Institute for Energy Innovation, Carnegie Mellon University, Pittsburgh, PA, November 8, 2022

Near-Term Outlook for Domestic Energy Markets, 39th USAEE/IAEE North American Conference, Houston, TX, October 25, 2022

Global and Domestic Energy Trends, Baker Botts Annual Energy Summit, Baker Institute, Rice University, Houston, TX, September 28, 2022