

# Jesse D. Jenkins



Curriculum Vitae updated February 2023

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CONTACT INFORMATION	Princeton University Andlinger Center for Energy & Environment Princeton, NJ 08540	503-333-1737 (m) <a href="mailto:jessejenkins@princeton.edu">jessejenkins@princeton.edu</a> <a href="#">Google Scholar profile</a>
RESEARCH FOCUS	I improve and apply optimization-based macro-energy systems models to evaluate and optimize low-carbon energy technologies, guide energy innovation and resource allocation decisions, and provide decision support to accelerate transitions to net-zero emissions energy systems.	
APPOINTMENTS	2019-present	Assistant Professor, Department of Mechanical & Aerospace Engineering and Andlinger Center for Energy & Environment, Princeton University
	2019-present	Affiliated Faculty, Center for Policy Research in Energy & Environment, School of Public & International Affairs, Princeton University
	2019-present	Associated Faculty, High Meadows Environmental Institute, Princeton University
	2018-2019	Postdoctoral Environmental Fellow, Harvard Kennedy School and Harvard University Center for the Environment
EDUCATION	2018	Ph.D. in Engineering Systems, Institute for Data, Systems and Society, Massachusetts Institute of Technology Thesis: Electricity System Planning with Distributed Energy Resources: New Methods and Insights for Economics, Regulation and Policy [ <a href="#">pdf</a> ], [ <a href="#">slides</a> ].
	2014	S.M. in Technology and Policy, Engineering Systems Division, Massachusetts Institute of Technology Thesis: Economic Regulation of Electricity Distribution Utilities Under High Penetration of Distributed Energy Resources [ <a href="#">pdf</a> ].
	2006	B.S. in Computer and Information Science and Philosophy, Robert D. Clark Honors College, University of Oregon ( <i>magna cum laude</i> )
OTHER RESEARCH EXPERIENCE	2017-2018	Research assistant, Electric Power Systems Center, MIT Energy Initiative
	2013-2017	Research assistant, Utility of the Future Study, MIT Energy Initiative [ <a href="#">link</a> ]
	2015-2015	Summer research fellow, Energy Systems Division, Argonne National Laboratory
	2012-2013	Research assistant, Production in the Innovation Economy Study, MIT Industrial Performance Center [ <a href="#">link</a> ]
	2008-2012	Director of energy and climate policy, Breakthrough Institute
	2006-2008	Research and policy associate, Renewable Northwest
ADVISORY AND CONSULTING ROLES	2022-present	Advisory board member, Rondo Energy
	2022-present	Technical and scientific advisor, Energy Impact Partners
	2022-present	Technical and scientific advisor, MUUS Climate Partners
	2021-present	Advisory board member, Eavor Technologies
	2018-present	Partner, DeSolve, LLC
	2014-present	Consultant, Clean Air Task Force

FELLOWSHIPS,  
AWARDS, AND  
HONORS

- 2023 Engineering News-Record 2022 [Top 25 Newsmakers Award](#) (for public research impact)
- 2022 Princeton Engineering Research Council Award for Excellent in Teaching (for Spring '21)
- 2021 Princeton School of Engineering and Applied Sciences Commendation List for Outstanding Teaching (for Spring '21)
- 2020 Selected to serve on National Academies of Science, Engineering, and Medicine Committee on Accelerating Decarbonization in the United States
- 2020 Princeton School of Engineering and Applied Sciences Engineering Commendation List for Outstanding Teaching (for Spring '20 & Fall '20)
- 2018 Harvard Society of Environmental Fellows Postdoctoral Fellowship
- 2017 MIT Energy Initiative Energy Fellowship
- 2016 Martin Family Society of Graduate Fellows for Sustainability Fellowship
- 2014 Best Technology & Policy Thesis nominee
- 2012 National Science Foundation Graduate Research Fellowship; MIT Energy Initiative Energy Fellowship

TEACHING

Princeton University

Applied Optimization Methods for Energy Systems Engineering (500 level graduate elective), Fall 2020, Fall 2022 (Awards: Princeton School of Engineering and Applied Sciences Engineering **Commendation List for Outstanding Teaching**)

Introduction to the Electricity Sector: Engineering, Economics and Regulation (400-level undergraduate electric and 500 level graduate elective), Spring 2020, Spring 2021, Spring 2022, Spring 2023 (Awards: Princeton School of Engineering and Applied Sciences Engineering **Commendation List for Outstanding Teaching**; Princeton Engineering Council **Award for Excellent in Teaching**.)

Massachusetts Institute of Technology

Engineering, Economics and Regulation of the Electric Power Sector (teaching assistant, lecturer, graduate level), Spring 2015, Spring 2016, Spring 2017, Spring 2018

Review of Concepts and Mathematics for Microeconomics (instructor, graduate-level review for incoming students), Summer 2015, Summer 2016, Summer 2017

University of Oregon

Ecological Footprint of Energy Systems (teaching assistant, undergrad-level), Fall 2005, Spring 2006

PREPRINTS

10. Jacobson, A., Pecci, F., Xu, Q., Sepulveda, N., **Jenkins, J.D.**, "A computationally efficient Benders decomposition for energy systems planning problems with detailed operations and time-coupling constraints," *INFORMS J. on Optimization*, submitted (manuscript available upon request).
9. Bistline, J. et al., "Emissions and Energy System Impacts of the Inflation Reduction Act of 2022," *Science*, submitted (manuscript available upon request).
8. Moglen, R. et al., "The State of Macro-Energy Systems Research: Common Critiques, Current Progress, and Research Frontiers," *iScience*, under review (manuscript available upon request).
7. Levin T., et al., "Informing Energy Storage Solutions to Decarbonize Electricity: Challenges and Opportunities in Capacity Expansion Modelling," *Nature Energy*, under review (manuscript available upon request).
6. Xu, Q., Manocha, A., Patankar, N., **Jenkins, J.D.**, "System-level Impacts of 24/7 Carbon-free Electricity Procurement," *Joule*, revise and resubmit (manuscript available upon request).
5. Ricks, W., Voller, K., Norbeck, J., **Jenkins, J.D.**, "The Role of Flexible Geothermal Power in Decarbonized Electricity Systems," *Nature Energy*, minor revisions ([available here](#)).

4. Patankar, N., Sarkela-Basset, X., Schivley, G., Leslie, E., *Jenkins, J.D.*, “Land Use Trade-offs in Decarbonization of Electricity Generation in the American West, *Energy & Climate Change*, minor revisions, ([available here](#)).
  3. van der Jagt, S., Patankar, N., **Jenkins, J.D.**, “Understanding the role and design space of demand sinks in low-carbon power systems,” working paper, ([available here](#)).
  2. Mays, J., **Jenkins, J.D.**, “Electricity markets under deep decarbonization,” *IEEE Trans. on Energy Markets, Policy and Regulation*, under review, ([available here](#)).
  1. Mayfield, E., **Jenkins, J.D.**, Greig, C., Larson, E., “Labor pathways to achieve net-zero emissions in the United States by mid-century,” *Energy Policy*, under review (manuscript available upon request).
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25. Schwartz, J., Ricks, W., Kolemen, E., **Jenkins, J.D.** (2023), “The value of fusion energy to a decarbonized United States electric grid,” *Joule*, in press. [[working paper](#)].
  24. Cheng F., Luo, H., **Jenkins, J.D.**, Larson, E. (2023), “The value of low-and negative-carbon fuels in the transition to net-zero emission economies: Lifecycle greenhouse gas emissions and cost assessments across multiple fuel types,” *Applied Energy* 331: 120388, [doi:10.1016/j.apenergy.2022.120388](https://doi.org/10.1016/j.apenergy.2022.120388).
  23. Ricks, W., Xu, Qingyu, **Jenkins, J.D.** (2022), “Minimizing emissions from grid-based hydrogen production in the United States,” *Environmental Research Letters* 18(1): 014025, [doi:10.1088/1748-9326/acacb5](https://doi.org/10.1088/1748-9326/acacb5).
  22. Lau M., Ricks, W., Patankar, N., **Jenkins, J.D.** (2022), “Europe’s way out: Tools to rapidly eliminate imports of Russian natural gas,” *Joule*, 6(10): 2219-2224, [doi:10.1016/j.joule.2022.09.003](https://doi.org/10.1016/j.joule.2022.09.003); [[cited by](#)].
  21. Cheng, F., Patankar, N., Chakrabarti, S, **Jenkins, J.D.** (2022), “Evaluating the operation flexibility of natural gas combined cycle power plant coupled with flexible carbon capture and storage,” *I.J. Greenhouse Gas Control*, 118: 103686, [doi:10.1016/j.ijggc.2022.103686](https://doi.org/10.1016/j.ijggc.2022.103686); [[pdf](#)]; [[cited by](#)].
  20. Ricks, W., Norbeck, J., **Jenkins, J.D.** (2022), “The value of in-reservoir energy storage for flexible operation of geothermal systems,” *Applied Energy*, 313: 118807, [doi:10.1016/j.apenergy.2022.118807](https://doi.org/10.1016/j.apenergy.2022.118807); [[pdf](#)]; [[cited by](#)].
  19. Fell, H., Gilbert, A., **Jenkins, J.D.**, Mildenerger, M. (2022), “Reply to “Nuclear power and renewable energy are both associated with national decarbonization,” *Nature Energy*, 7: 25-29, [doi:10.1038/s41560-021-00964-w](https://doi.org/10.1038/s41560-021-00964-w); [[pdf](#)]; [[cited by](#)].
  18. Mayfield, E., **Jenkins, J.D.** (2021), “Influence of high road labor policies and practices on renewable energy costs, decarbonization pathways, and labor outcomes,” *Environmental Research Letters* 16(12) 124012, [doi:10.1088/1748-9326/ac34ba](https://doi.org/10.1088/1748-9326/ac34ba); [[cited by](#)].
  17. **Jenkins, J.D.**, Mayfield, E., Larson, E., Pacala, S., Greig, C. (2021), “Mission net-zero America: the nation-building path to a prosperous net-zero emissions economy,” *Joule* 5(11): 2755-2761, [doi:10.1016/j.joule.2021.10.016](https://doi.org/10.1016/j.joule.2021.10.016), [[pdf](#)], [[cited by](#)].
  16. **Jenkins, J.D.**, Sepulveda, N.S. (2021), “Long duration energy storage: a blueprint for research and innovation,” *Joule* 5(9): 2241-2246, [doi:10.1016/j.joule.2021.08.002](https://doi.org/10.1016/j.joule.2021.08.002) [[pdf](#)]; [[cited by](#)].
  15. Baik, E.J., Chawla, K.P., **Jenkins, J.D.**, Kolster, C., Patankar, N.S., Olson, A., Benson, S.M., Long, J. (2021), “What is different about different net-zero carbon electricity systems,” *Energy & Climate Change*, 2: 100046, [doi:10.1016/j.egycc.2021.100046](https://doi.org/10.1016/j.egycc.2021.100046) [[pdf](#)]; [[cited by](#)].
  14. Sepulveda N.A., **Jenkins, J.D.**, Edington, A., Mallpragada, D., Lester, R.K (2021), “The design space for long-duration energy storage in decarbonized power systems,” *Nature Energy*, [doi:10.1038/s41560-021-00796-8](https://doi.org/10.1038/s41560-021-00796-8) [[pdf](#), [SI](#)]; [[cited by](#)]

REFEREED  
JOURNAL  
ARTICLES

13. DeCarolis, J.F., Jaramillo, P., ... **Jenkins, J.D.**, et al. (2020), "Leveraging open-source tools for collaborative macro-energy system modeling efforts," *Joule* 4(12): 2523-2526 doi:10.1016/j.joule.2020.11.002 [pdf]; [cited by].
12. Mallapragada, D.S., Sepulveda, N.M., **Jenkins, J.D.** (2020), "Long-run system value of battery energy storage in future grids with increasing wind and solar generation," *Applied Energy* 275 115390 doi:10.1016/j.apenergy.2020.115390 [pdf]; [cited by].
11. Burger, S.P., **Jenkins, J.D.**, Battle, C., Pérez-Arriaga, I.J. (2019), "Restructuring revisited part 1: competition in electricity distribution systems," *The Energy Journal* 40(3) doi:10.5547/01956574.40.3.sbur [pdf]; [cited by].
10. Burger, S.P., **Jenkins, J.D.**, Battle, C., Pérez-Arriaga, I.J. (2019), "Restructuring revisited part 2: coordination in electricity distribution systems," *The Energy Journal* 40(3) doi:10.5547/01956574.40.3.jjen [pdf]; [cited by].
9. **Jenkins, J.D.**, Luke, M., Thernstrom, S. (2018), "Getting to zero carbon emissions in the electric power sector," *Joule* 2(12) doi:10.1016/j.joule.2018.11.013 [pdf]; [cited by].
8. Sepulveda, N., **Jenkins, J.D.**, Lester, R., de Sisternes, F. (2018), "The role of firm low-carbon electricity resources in deep decarbonization of electric power generation," *Joule* 2(11). doi:10.1016/j.joule.2018.08.006 [pdf] [cited by]
7. **Jenkins, J.D.**, Zhou, Z., Ponciroli, R., Ganda, F., de Sisternes, F., Botterud, A. (2018), "The benefits of nuclear flexibility in power systems operations with renewable energy," *Applied Energy* 222: 872-884. doi:10.1016/j.apenergy.2018.03.002; [cited by].
6. Ponciroli, R., Wang, Y., Zhou, Z., Botterud, A., **Jenkins, J.D.**, Vilim, R.B., Ganda, F. (2017), "Profitability evaluation of load-following nuclear units with physics-induced operational constraints," *Nuclear Technology* 200(3): 189-207 doi:10.1080/00295450.2017.1388668; [cited by].
5. **Jenkins, J.D.**, Pérez-Arriaga, I. (2017), "Improved regulatory approaches for the remuneration of electricity distribution utilities with high penetrations of distributed energy resources," *The Energy Journal* 38(3): 63-91 doi:10.5547/01956574.38.3.jjen; [cited by].
4. Pérez-Arriaga, I., **Jenkins, J.D.**, Battle, C. (2017), "A regulatory framework for an evolving electricity sector: highlights of the MIT Utility of the Future study" *Economics of Energy and Environmental Policy* 6(1): 71-92 doi:10.5547/2160-5890.6.1.iper; [cited by].
3. de Sisternes, F.J., **Jenkins, J.D.**, Botterud, A. (2016), "The value of energy storage in decarbonizing the electricity sector," *Applied Energy* 175: 368-379 doi:10.1016/j.apenergy.2016.05.014; [cited by].
2. Loftus, P.J., Cohen, A.M., Long, J.C.S, **Jenkins, J.D.** (2015), "Global decarbonization scenarios: a critical review," *Wiley Interdisciplinary Reviews: Climate Change* 6(1): 93-112 doi:10.1002/wcc.324; [cited by].
1. **Jenkins, J.D.** (2014), "Political economy constraints on carbon pricing policies: What are the implications for economic efficiency, environmental efficacy, and climate policy design?" *Energy Policy* 69: 467-477. doi:10.1016/j.enpol.2014.02.003; [cited by].

PUBLIC-FACING  
RESEARCH  
REPORTS

15. Xu, Q., Patankar, N., Lau, M., Zhang, C., **Jenkins, J.D.**, “Cleaner, Faster, Cheaper: Impacts of the Inflation Reduction Act and a Blueprint for Rapid Decarbonization in the PJM Interconnection,” Princeton, NJ: Zero-Carbon Energy Systems Research and Optimization Laboratory (ZERO Lab), Princeton University, December 2022, [doi:10.5281/zenodo.7423518](https://doi.org/10.5281/zenodo.7423518).
14. **Jenkins, J.D.**, Farbes, J., Jones, R., Patankar, N., Schivley, G., “Electricity Transmission is Key to Unlock the Full Potential of the Inflation Reduction Act,” Princeton, NJ: REPEAT Project, September 2022, [doi:10.5281/zenodo.7106175](https://doi.org/10.5281/zenodo.7106175)
13. Xu, Q., **Jenkins, J.D.**, “Electricity System and Market Impacts of Time-based Attribute Trading and 24/7 Carbon-free Electricity Procurement,” Princeton, NJ: Zero-Carbon Energy Systems Research and Optimization Laboratory (ZERO Lab), Princeton University, September 2022, [doi:10.5281/zenodo.7082211](https://doi.org/10.5281/zenodo.7082211).
12. **Jenkins, J.D.**, Farbes, J., Jones, R., Mayfield, E.N., “REPEAT Project Section-by-Section Summary of Energy and Climate Policies in the 117th Congress,” Princeton, NJ: REPEAT Project, August 2022, [doi:10.5281/zenodo.6993117](https://doi.org/10.5281/zenodo.6993117)
11. **Jenkins, J.D.**, Mayfield, E.N., Farbes, J., Jones, R., Patankar, N., Xu, Q., Schivley, G., “Preliminary Report: The Climate and Energy Impacts of the Inflation Reduction Act of 2022,” Princeton, NJ: REPEAT Project, August 2022, [doi:10.5281/zenodo.7106217](https://doi.org/10.5281/zenodo.7106217)
10. Lau, A., Ricks, W., Patankar, N., *Jenkins, J.D.*, “Pathways to European Independence from Russian Natural Gas,” Princeton, NJ: Zero-Carbon Energy Systems Research and Optimization Laboratory (ZERO Lab), Princeton University, July 2022, [doi:10.5281/zenodo.6811675](https://doi.org/10.5281/zenodo.6811675); [cited by].
9. Xu, Q., Patankar, N., Zhang, C., **Jenkins, J.D.**, “New Jersey’s Pathway to a 100% Carbon-Free Electricity Supply: Policy and Technology Choices Through 2050,” Princeton, NJ: Zero-Carbon Energy Systems Research and Optimization Laboratory (ZERO Lab), Princeton University, March 2022, [doi:10.5281/zenodo.6345570](https://doi.org/10.5281/zenodo.6345570).
8. **Jenkins, J.D.**, Mayfield, E.N., Jones, R., Farbes, J., Patankar, N., et al., “Summary Report: The Climate Impact of Congressional Infrastructure and Budget Bill,” Princeton, NJ: REPEAT Project, February 2022, [doi:10.5281/zenodo.6311985](https://doi.org/10.5281/zenodo.6311985)
7. Xu, Q., Manocha, A., Patankar, N., **Jenkins, J.D.**, “System-level Impacts of 24/7 Carbon-free Electricity Procurement,” Princeton, NJ: Princeton, NJ: Zero-Carbon Energy Systems Research and Optimization Laboratory (ZERO Lab), Princeton University, November 2021. [doi:10.5281/zenodo.6229425](https://doi.org/10.5281/zenodo.6229425); [cited by].
6. Larson, E., Greig, C., **Jenkins, J.D.** et al., Net-Zero America: Potential Pathways, Infrastructure, and Impacts. Princeton, NJ: Princeton University, December 2020 (interim report), October 2021 (final report). [\[link\]](#); [cited by].
5. Long, J.C.S., Baik, E., **Jenkins, J.D.**, et al., “California needs clean firm power, and so does the rest of the world,” report of the SB 100 Pathways Project. San Francisco, CA: Environmental Defense Fund, March 2021. [\[link\]](#).
4. National Academies of Sciences, Engineering, and Medicine. Accelerating Decarbonization of the U.S. Energy System. Washington, DC: The National Academies Press, January 2021. [doi:10.17226/25932](https://doi.org/10.17226/25932), [\[link\]](#); [cited by].
3. **Jenkins, J.D.**, Stokes, L., Wagner, G. (ed.), “Carbon Pricing and Innovation in a World of Political Constraints,” workshop report, December 2020; [\[link\]](#).

2. Pérez-Arriaga, I.J., et al., Utility of the Future: An MIT Energy Initiative response to an industry in transition, Cambridge, MA: MIT Energy Initiative, December, 2016. (Lead author of Chapters 5, 6, and 8 and contributor to Chapters 1, 2, 4, 9, and Executive Summary) [\[link\]](#) [\[cited by\]](#).
1. Berger, S., et al., Making in America: From Innovation to Market, Cambridge, MA: MIT Press, August, 2013. (Contributor to Chapter 8) [\[link\]](#).

WORKING PAPERS

7. **Jenkins, J.D.** (2019), “Why carbon pricing falls short (and what to do about it),” Kleinman Center for Energy Policy, University of Pennsylvania, [\[link\]](#); [\[pdf\]](#); [\[cited by\]](#).
6. Burger, S.B., **Jenkins, J.D.**, Batlle, C. and Pérez-Arriaga, I. (2018), “Restructuring revisited: competition and coordination in electricity distribution systems,” MIT Center for Energy and Environmental Policy Research, Working Paper Series No. 2018-007 [\[link\]](#); [\[pdf\]](#); [\[brief\]](#); [\[cited by\]](#).
5. **Jenkins, J.D.** (2018), “What’s killing nuclear power in U.S. electricity markets? Drivers of wholesale price declines at nuclear generators in the PJM Interconnection,” MIT Center for Energy and Environmental Policy Research, Working Paper Series No. 2018-001 [\[link\]](#); [\[pdf\]](#) [\[brief\]](#) [\[cited by\]](#).
4. **Jenkins, J.D.** and Sepulveda, N. (2017), “Enhanced Decision Support for a Changing Electricity Landscape: the GenX Configurable Electricity Resource Capacity Expansion Model,” MIT Energy Initiative Working Paper [\[link\]](#); [\[cited by\]](#).
3. Batlle, C., Chavez-Avila, J.P., Mastropietro, P., **Jenkins, J.D.**, and Rodilla, P. (2017), “Regulated charges and electricity bills for a distributed future: efficient price signals for increasingly elastic end-users,” MIT Energy Initiative Working Paper [\[link\]](#).
2. **Jenkins, J.D.** and Karplus, V.J. (2016), “Carbon pricing under binding political constraints,” UN University-WIDER, Working Paper 2016/44 [\[link\]](#); [\[cited by\]](#).
1. **Jenkins, J.D.** and Pérez-Arriaga, I. (2014), “The Remuneration Challenge: New solutions for the regulation of electricity distribution utilities under high penetrations of distributed energy resources and smart grid technologies,” MIT Center for Energy and Environmental Policy Research, Working Paper No. 2014-005 [\[link\]](#); [\[cited by\]](#).

BOOK CHAPTERS  
AND MAGAZINE  
ARTICLES

4. Long, J.C.S., Baik, E., **Jenkins, J.D.**, et al. (2021), “Clean Firm Power is the Key to California’s Carbon-Free Energy Future,” *Issues in Science and Technology*, March 24, 2021. [\[link\]](#); [\[cited by\]](#).
3. Azevedo, I., Davidson, M.R., **Jenkins, J.D.**, Karplus, V.J., Victor, D.G. (2020), “The Paths to Net Zero: How Technology Can Save the Planet,” *Foreign Affairs* 99 (May/June 2020), [\[link\]](#) [\[pdf\]](#) [\[cited by\]](#).
2. Burger, S.P., **Jenkins, J.D.**, Huntington, S.C., Pérez-Arriaga, I.J. (2019), “Why distributed? A critical review of the tradeoffs between centralized and decentralized resources,” *IEEE Power and Energy Magazine* 17(2): 16-24. [doi:10.1109/MPE.2018.2885203](#) [\[pdf\]](#); [\[cited by\]](#).
1. **Jenkins, J.D.**, Karplus, V.J. (2017), “Carbon Pricing under Political Constraints: Insights for Accelerating Clean Energy Transitions,” in Arent, D. et al. (Ed.), *The Political Economy of Clean Energy Transitions* (pp. 39-59), Oxford, UK: Oxford University Press [\[pdf\]](#) [\[cited by\]](#).

INVITED  
PRESENTATIONS,  
SEMINARS, AND  
PUBLIC LECTURES  
(LAST 24 MONTHS)

35. Rutgers University, Climate Academy public webinar, February 10, 2023.
34. U.S. Environmental Protection Agency, presentation, annual leadership retreat, February 1, 2023.
33. Sloan Foundation, staff seminar, January 17, 2023.
32. Carnegie Mellon University, Engineering and Public Policy Seminar, December 14, 2022.
32. Harvard Electricity Policy Group, December 12, 2022.
31. New England Restructuring Roundtable, December 9, 2022.
30. Massachusetts Institute of Technology, Center for Energy and Economic Policy Research Annual Meeting, November 17, 2022.
29. U.S. House of Representatives New Democrats Caucus, staff briefing, November 15, 2022.
28. Federal Energy Regulatory Commission, staff training webinar, November 1, 2022.
27. The Engine, Tough Tech Summit, October 27, 2022.
26. Boston College, Faculty Climate Change Research Seminar, October 26, 2022.
25. GE, Energy Leadership Forum, October 13, 2022.
24. University of Washington, Clean Energy Institute Seminar, October 6, 2022.
23. New Jersey Clean Energy Conference, keynote address, October 4, 2022.
25. U.S. House of Representatives Sustainable Energy & Environment Caucus, September 22, 2022.
24. Electric Power Research Institute, Workshop on Modeling Advanced Nuclear Technologies, September 19, 2022.
23. Princeton University, Bradford Seminar, September 12, 2022, [[video](#)].
22. UK Climate Change Committee, staff briefing, September 9, 2022.
21. Princeton Plasma Physics Laboratory, PPPL Colloquium, September 8, 2022, [[video](#)].
20. National Association of Regulatory Utilities Commissions (NARUC), Electricity Committee meeting, August 26, 2022.
19. Electric Power Research Institute, Overcoming Barriers to Deploying Direct Air Capture, August 11, 2022.
18. Resources For the Future, public webinar in impacts of the Inflation Reduction Act, August 10, 2022.
17. Columbia University, Center for Global Energy Policy, invited seminar, July 12, 2022.
16. VERGE Electrify, keynote address, July 7, 2022, [[video](#)].
16. ARPA-E, Annual Summit, invited panelist, May 23, 2022.
15. National Academies of Science, Engineering, Medicine (NASEM), Carbon Utilization Webinar, March 2, 2022.
14. Argonne National Laboratory, Informing Storage Solutions to Decarbonize Electricity Workshop, November 2, 2021 [[slides](#)].
13. Presidential Council of Advisors on Science and Technology (PCAST), Public Meeting on Climate Change, Energy, and the Environment, October 18, 2021 [[video](#)], [[slides](#)].
12. Temple University, Transformation Technology Lecture Series, October 15, 2021 [[slides](#)].
11. Carnegie Mellon University & University of Oxford, Battery Modeling Webinar Series, May 18, 2021 [[slides](#)].
10. Stanford University, Energy Resources Engineering departmental seminar, May 10, 2021 [[slides](#)], [[video](#)].
9. MIT Alumni Energy, Environment and Sustainability Network seminar, April 28, 2021 [[slides](#)].

8. Columbia University, Center for Global Energy Policy Virtual Event, March 15, 2021 [[video](#)].
7. Tufts University, CREATE Solutions Seminar, March 5, 2021 [[video](#)].
6. Garden Club of America, National Affairs and Legislation Conference, February 24, 2021.
5. Midwest Governors Association, MID-GRID 2035 Workshop, Keynote, February 23, 2021.
4. Clean Energy States Alliance, 100% Clean Energy Co Webinar, February 23, 2021, [[video](#)].
3. Environmental Defense Fund, Science Day 2021, February 3, 2021.
2. Harvard Electricity Policy Group, February 3, 2021.
1. University of Pennsylvania, Kleinman Center for Energy Policy Webinar, January 28, 2021 [[video](#)].

GOVERNMENT  
TESTIMONY

5. “New Jersey’s Pathway to a 100% Carbon-Free Electricity Supply,” Committee on Environment and Energy, New Jersey State Senate, March 14, 2022 [[pdf](#)].
4. “Lessons on lessons learned from the Texas Blackouts: research needs for a secure and resilient grid,” Committee on Science, Space and Technology, United States House of Representatives, March 18, 2021 [[link](#)].
3. “Testimony on firm low-carbon resources, nuclear power, and the transition to a net zero emissions electricity system,” Select Committee on the Climate Crisis, United States House of Representatives, September 20, 2019 [[pdf](#)].
2. “Testimony regarding the Climate and Community Protection Act,” Committee on Environmental Conservation, New York State Senate, February 12, 2019 [[pdf](#)].
1. “Invited testimony on energy innovation policy,” Committee on Energy and Natural Resources, United States Senate, May 22, 2012 [[pdf](#)] [[video](#)].



RESEARCH FUNDING (\$4.8 MILLION SECURED TO DATE)	2023	Department of Energy, Advanced Research Projects Agency for Energy (ARPA-E), "Electricity system capacity expansion and operational modeling for evaluation and optimization of flexible carbon capture and sequestration systems," Phase 2,	\$349,998
	2023	Breakthrough Energy, Unrestricted gift in support of ZERO Lab Technology Evaluation Program,	\$100,000
	2023	ClearPath Foundation, Unrestricted gift in support of ZERO Lab Technology Evaluation Program,	\$100,000
	2023	GE, Unrestricted gift in support of ZERO Lab Technology Evaluation Program,	\$100,000
	2023	Princeton University Climate Mitigation Initiative (BP), "General support for energy systems modeling"	\$100,000
	2023	Princeton University Climate Mitigation Initiative (BP), "Postdoctoral fellowship program"	\$100,000
	2022	Department of Energy, Advanced Research Projects Agency for Energy (ARPA-E), "In-reservoir energy storage and flexible geothermal: Field-scale demonstration and validation," subaward	\$249,820
	2022	Hewlett Foundation, "U.S. clean energy policy evaluation project" (extension),	\$255,000
	2022	Google, Electricity System and Market Impacts of Time-based Attribute Trading and 24x7 Carbon-free Electricity Procurement,	\$76,006
	2022	Princeton University Climate Mitigation Initiative (BP), "General support for energy systems modeling"	\$100,000
	2022	Princeton University Climate Mitigation Initiative (BP), "Postdoctoral fellowship program"	\$100,000
	2022	ClearPath Foundation, Unrestricted gift in support of ZERO Lab Technology Evaluation Program,	\$100,000
	2022	Google, Unrestricted gift in support of ZERO Lab Technology Evaluation Program,	\$200,000
	2022	GE, Unrestricted gift in support of ZERO Lab Technology Evaluation Program,	\$100,000
	2021	Google, "Evaluation of 24x7 clean electricity procurement,"	\$95,500
	2021	Hewlett Foundation, "U.S. clean energy policy evaluation project,"	\$530,000
	2021	Princeton University Climate Mitigation Initiative (BP), "General support for energy systems modeling"	\$100,000
	2021	Princeton University Climate Mitigation Initiative (BP), "Postdoctoral fellowship program"	\$100,000
	2020	Community Energy, "PJM rapid decarbonization blueprint and policy evaluation"	\$154,842
	2020	Department of Energy, Geothermal Technologies Office (GTO), "In-reservoir energy storage for flexible geothermal operations" (sub-awardee)	\$66,000
2020	BlueGreen Alliance, "Effects of labor cost premiums on U.S. decarbonization pathways and renewable energy sector employment"	\$34,563	
2020	Department of Energy, Advanced Research Projects Agency for Energy (ARPA-E), "Electricity system capacity expansion and operational modeling for evaluation and optimization of flexible carbon capture and sequestration systems"	\$683,454	
2020	Sloan Foundation, Hewlett Foundation, Center for Equitable Growth, and the Niskanen Center, "Workshop on carbon pricing under political constraints" (co-PI)	\$120,000	

2020	Princeton University Climate Mitigation Initiative (BP), “General support for energy systems modeling”	\$100,000
2020	Princeton University Climate Mitigation Initiative (BP), “Postdoctoral fellowship program”	\$100,000
2019	PSEG, “New Jersey’s Role in Deep Decarbonization of PJM” (co-PI)	\$251,383
2019	Bernard and Anne Spitzer Charitable Trust, “Electricity modeling and data platform project” (co-PI)	\$415,907

**SERVICE POSITIONS**

Member, Princeton University Faculty Panel on Dissociation Metrics, Principles, and Standards, 2021-2022

Organizing Committee Member, National Academy of Engineering 2022 US Frontiers in Engineering Symposium, 2021-2022

Steering Committee Member, Macro-Energy Systems Society, 2020-present [\[link\]](#)

Member, Princeton Student Life Committee, 2020-2022

Consensus Committee Member, National Academies of Science, Engineering and Medicine (NASEM) study on Accelerating Decarbonization in the United States: Technology, Policy, and Societal Dimensions, 2020-2022 [\[link\]](#)

Member, Technical Advisory Group, New York State Climate Action Committee, 2021

Steering Committee Member, Macro-Energy Systems Workshop, 2020 [\[link\]](#)

Technical Steering Committee Member, Commonwealth of Massachusetts 2050 Decarbonization Roadmap, 2019-2020 [\[link\]](#)

Co-President, MIT Electricity Students Research Group (ESRG), 2014-2017

**PROFESSIONAL ACTIVITIES AND AFFILIATIONS**

Member, Institute for Operations Research and the Management Sciences (INFORMS), 2009-present

Member, International Association for Energy Economics (IAEE), 2012-present

Member, US Association for Energy Economics (USAEE), 2012-present

Student member, Association of Environmental and Resource Economists (AERE), 2017-2018

Student member, Institute for Electrical and Electronics Engineers (IEEE), 2016-2017

**POSTDOCTORAL ADVISEES**

9. A.D.T. “Dasun” Perera, 2022-present
8. Filippo Pecci, 2022-present
7. Aniruddh Mohan (Andlinger Distinguished Postdoctoral Fellow), 2022-present (co-advised with Eric Larson)
6. Fangwei Cheng, 2020-present
5. Jacob Schwartz, 2020-2022 (co-advised with Egemen Kolemen), Currently: Staff Scientist, Princeton Plasma Physics Laboratory
4. Qingyu Xu, 2020-2022, Currently: Research Faculty, Energy Internet Research Institute, Tsinghua University
3. Neha Patankar, 2019-2022, Currently: Assistant Professor, Systems Science and Industrial Engineering, Binghamton University
2. Erin Mayfield, 2019-2022, (co-advised with Eric Larson), Currently: Assistant Professor, Thayer School of Engineering, Dartmouth College
1. Chuang Zhang, 2019-2021 (co-advised with Eric Larson), Currently: Assistant Professor, Institute of Energy, Peking University

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|-----------------------------------|---|
| DOCTORAL<br>STUDENT ADVISEES      | <ol style="list-style-type: none"> <li>10. Gabriel Mantegna, Mechanical &amp; Aerospace Engineering, G1, 2022-present</li> <li>9. Mohamed Atouife, Mechanical &amp; Aerospace Engineering, G1, 2022-present</li> <li>8. Yanjie Zheng, Mechanical &amp; Aerospace Engineering, 2022-present G4, (co-advised with Kelsey Hatzell)</li> <li>7. Michael Lau, Mechanical &amp; Aerospace Engineering, G2, 2021-present</li> <li>6. Avery Barnett, Public &amp; International Affairs, Science, Technology &amp; Environmental Policy, G2, 2021-present (co-advised with Michael Oppenheimer)</li> <li>5. Edmund "Ned" Downie, Public &amp; International Affairs, Science, Technology &amp; Environmental Policy, G2, 2021-present (co-advised with Denise Mauzerall)</li> <li>4. Oladoyin Phillips, Public &amp; International Affairs, Science, Technology &amp; Environmental Policy, G3, 2020-present (co-advised with Michael Oppenheimer)</li> <li>3. Malini Nambiar, Public &amp; International Affairs, Science, Technology &amp; Environmental Policy, G4, 2021-present (co-advised with Denise Mauzerall)</li> <li>2. Anna Jacobson, Program on Quantitative &amp; Computational Biology, G4, 2020-present (co-advised with Simon Levin)</li> <li>1. Wilson Ricks, Mechanical &amp; Aerospace Engineering, G4, 2020-present</li> </ol> |
| MASTERS STUDENT<br>ADVISEES       | <ol style="list-style-type: none"> <li>2. Chris Lawrie, Mechanical &amp; Aerospace Engineering, MEng, 2021-2022</li> <li>1. Xiili Sarkela-Bassett, Civil &amp; Environmental Engineering, MSE, 2019-2020</li> </ol>   |
| UNDERGRADUATE<br>STUDENT ADVISEES | <ol style="list-style-type: none"> <li>12. Aneesha Manocha, Electrical &amp; Computer Engineering, 2020-present (Kanders Churchill Scholar, 2023)</li> <li>11. Riti Bhandarkar, Civil &amp; Environmental Engineering, 2020-present</li> <li>10. Aaron Chaffee, Operations Research &amp; Financial Engineering, 2022-present</li> <li>9. Emilio Cano Renteria, Civil &amp; Environmental Engineering, 2022-present</li> <li>8. Arielle Rivera, Electrical &amp; Computer Engineering, 2022-present</li> <li>7. Katherine Graham, Electrical &amp; Computer Engineering, 2022-present</li> <li>6. Patrick Huang, Mechanical &amp; Aerospace Engineering, 2021-2022</li> <li>5. Claire Wayner, Civil &amp; Environmental Engineering, 2020-2022, (Pyne Prize, 2022)</li> <li>4. Sam van der Jagt, Mechanical &amp; Aerospace Engineering, 2020-2021</li> <li>3. Cutter Esson, Mechanical &amp; Aerospace Engineering, 2019-2020</li> <li>2. Alex Caldwell, Mechanical &amp; Aerospace Engineering, 2019-2020</li> <li>1. Melissa Fan, Mechanical &amp; Aerospace Engineering, 2019-2020</li> </ol>   |