

Ellen Carlson, Associate

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PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Inc., Cambridge, MA. *Associate*, April 2024 – Present; *Research Associate II*, April 2023 – April 2024; *Research Associate I*, June 2022 – April 2023

- Performs quantitative and qualitative research and analysis on energy-sector issues including energy efficiency, the future of natural gas, and energy justice.

Cold Climate Housing Research Center, Fairbanks, AK. *Research Project Intern*, August 2021 – May 2022

- Finalized the data management plan for research project evaluating the moisture resilience of walls with blown-in fiberglass insulation in rural Alaska.
- Prepared research project communication and outreach materials including conference presentation slides and community information

National Renewable Energy Laboratory, Fairbanks, AK. *Science Undergraduate Laboratory Internship Research Intern*, May 2021 – August 2021

- Analyzed home assessment data to extract the median expected cost savings, carbon reduction, and energy use reduction for homeowners participating in the Thermalize Juneau residential clean energy campaign and compared them to energy modeling results.
- Conducted outreach phone calls to local homeowners to facilitate campaign participation and communication.

Research Experience for Undergraduates, University of Illinois at Urbana-Champaign. *Summer Research Intern, Gadow Lab*, May 2020 – August 2020

- Conducted research remotely on the topology of synthetic mechanical metamaterials.
- Helped design a LabVIEW FPGA computer program for a remote, manipulable spring force for a single harmonic oscillator.

EDUCATION

Haverford College, Haverford, PA: B.S. in Physics, Growth and Structure of Cities, 2022

Senior Theses: *Comparative simulation of the thermal performance of Trombe wall systems for Alaskan homes; Cold, Rural, and Remote: Approaches to Achieving Energy Efficiency in Alaskan Communities*

SKILLS

Microsoft Office Suite, SketchUp, ArcGIS, EnergyPlus and OpenStudio

PUBLICATIONS

Napoleon, A., I. Weiss, E. Carlson, T. Woolf, G. Ehrendreich, N. Newman, J. Michals. 2025. *Assessing the Distribution of Costs and Benefits of Energy Efficiency and Electric Vehicle Programs to Different Customers in Illinois*. Synapse Energy Economics and Midwest Energy Efficiency Alliance for E4theFuture.

Takahashi, K., A. Hopkins, P. Eash-Gates, E. Carlson, K. Schultz, E. Ashley. 2025. *Strategic Roadmap for Building Decarbonization - Policy, Regulatory, Workforce, and Equity Strategies for a Cleaner, Greener New Jersey*. Synapse Energy Economics and New Jersey agencies for the Governor's Office of Climate Action and the Green Economy.

Takahashi, K., A. S. Hopkins, E. Carlson, S. Schadler, S. Chavin. 2024. *Memo: Assessment of Electric Grid Headroom for Accommodating Building Electrification (Revised July 2024)*. Synapse Energy Economics to New Yorkers for Clean Power.

DeLeon, S., K. Takahashi, E. Carlson, A. S. Hopkins, S. Kwok, J. Litynski, C. Mattioda, L. Metz. 2024. *Minnesota Building Decarbonization Analysis: Equitable and cost-effective pathways toward net-zero emissions for homes and businesses*. Synapse Energy Economics for Clean Heat Minnesota.

Woolf, T., A. Napoleon, D. Goldberg, E. Carlson, C. Mattioda. 2023. *Distributed Equity Analysis for Energy Efficiency and Other Distributed Energy Resources*. Synapse Energy Economics for Lawrence Berkley National Lab and E4TheFuture.

Knight, P., O. Griot, J. Litynski, E. Carlson, J. Smith, A. Zeng, S. Kwok) and Climable.org (Stevenson-Zepeda, J., S. Kelly). 2023. *Massachusetts Technical Potential of Solar: An Analysis of Solar Potential and Siting Suitability in the Commonwealth*. Synapse Energy Economics and Climable.org for Massachusetts Department of Energy Resources.

Metz, L., M. Whited, P. Rhodes, E. Carlson. 2023. *Distribution System Investments to Enable Medium- and Heavy-Duty Vehicle Electrification*. Synapse Energy Economics for the Environmental Defense Fund.

Litynski, J., E. Carlson, P. Knight, J. Tabernero. 2023. *Gibbstown LNG Export Terminal: Lifecycle GHG Emissions Analysis*. Synapse Energy Economics for Delaware Riverkeeper Network.

Carlson, E., P. Eash-Gates, B. Fagan, A. Hopkins. 2023. *Review of Northwest Natural Gas 2022 Integrated Resource Plan—Final Report: Assessing Compliance with the Oregon IRP Guidelines and the Greenhouse Gas Reduction Requirements from the Climate Protection Program*. Synapse Energy Economics for Staff of Oregon Public Utilities Commission.

Resume updated November 2025