

## Education and Certifications

Ph.D., Astrophysical and Planetary Sciences, University of Colorado Boulder

M.S., Physics, Massachusetts Institute of Technology, Cambridge

B.S., Physics, University of Wisconsin, Milwaukee

B.A., English Literature and Creative Writing, Macalester College, Saint Paul, Minnesota

LEED Accredited Professional, Building Design and Construction, U.S. Green Building Council

## Professional Experience and Qualifications

Dr. Amalia Hicks, a senior associate in Cadmus' Energy Services Sector, has more than 20 years of experience in research, study planning, project management, data visualization, and results interpretation. Her responsibilities include managing portfolio-wide EM&V activities; leading emerging technology research and pilot program planning and evaluation; developing market transformation assessment strategies; and assisting in program planning and design for energy efficiency programs.

Before joining Cadmus, Dr. Hicks was the director of research at Sustainable Engineering Group, where she developed and led the energy efficiency research program. Her clients have included the U.S. Department of Energy, the Minnesota Department of Commerce, Wisconsin Focus on Energy, Alliant Energy, Southern California Edison, Pacific Gas and Electric, ASHRAE, and NASA. Dr. Hicks is an accomplished speaker, and she has authored more than 20 peer-reviewed journal publications.

## Relevant Experience

- **Alliant Energy.** Design, implementation, and evaluation of an emerging technology pilot and its expansion for Alliant Energy. The pilots test residential load disaggregation devices for their potential as cost-effective replacements for in-person energy audits, as real-time load management devices, and as a method of communication with customers.
- **Southern California Edison.** Manages analysis of thermostat data from multiple vendors to determine the effective useful life (EUL) of smart thermostats. Results will be applied to development of a workpaper for approval by the California Public Utilities Commission (CPUC).
- **Pacific Gas and Electric.** Leads the evaluation of two smart thermostat programs provided by Nest, Seasonal Savings and Peak Aware.
- **Minnesota Department of Commerce.**
  - Led the team that developed the Minnesota Technical Reference Manual version 3.0, which included review of TRM measures, codes and standards updates, proposing and developing new measures, and communication and coordination with approximately 30 stakeholders.
  - Evaluated the energy savings potential of displacement ventilation technology. This effort included billing analysis, managing site visits, and developing stakeholder surveys to identify cognitive barriers to market adoption.
- **Wisconsin Focus on Energy.** For four separate projects over five years, Dr. Hicks:
  - Manages evaluation, measurement, and verification efforts with added emphasis on pilots.
  - Contributed to program planning by determining the feasibility of offering a streamlined New Construction Program. Early program design efforts included developing energy savings prediction algorithms, obtained by applying regression analysis to EnergyPlus simulations.

- Led a research effort to determine the potential benefits of adopting a code-stretch program in the state; this work included identifying the most cost-effective building code updates included in the two most recent versions of the International Energy Conservation Code.
- Evaluated savings attained through the use of three advanced HVAC technologies, which involved collecting and analyzing billing data, planning and coordinating site visits, managing a team of field engineers, and developing a stakeholder survey.
- **U.S. Department of Energy.** Performed a market research study investigating stakeholders' responses to adding an operational component to the Building Energy Asset Score assessment tool. The study included designing a semi-structured interview guide; engaging key federal, state, and industry stakeholders; conducting a qualitative analysis of interview transcripts; and collaborating closely with the Pacific Northwest National Laboratory.

### Professional Memberships and Certifications

Midwest Energy Efficiency Alliance (MEEA) Policy Committee and Conference Committee, member

Dane County Office of Energy and Climate Change (OECC) Buildings Working Group, member

American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE), associate

### Recent Publications

Hicks, Amalia, S. Morner, and M. McDevitt. "ASHRAE Design Guide for Dedicated Outdoor Air Systems." 2017.

Hicks, Amalia and G. Linn. "An Alternative Method of Estimating Energy Savings for Commercial and Residential New Construction." June 2016.

Hicks, Amalia, E. Mueller, and M. McDevitt. "The Energy Conservation Potential of Displacement Ventilation Technology in Minnesota Climate Conditions." March 2016.

Hicks, Amalia, G. Linn, S. Morner, A. Derocher, and A. Harris. "Wisconsin Building Code Analysis: Identifying Low-Cost High-Impact Measures." April 2015.

Hicks, Amalia, J. Campbell, M. McDevitt, D. Stuligross, M. Barnett, and K. Haag. "Commercial Building Operational Assessment: Market Research." September 2014.

Hicks, Amalia, S. Morner, E. Mueller, J. Evans, A. Derocher, K. Von Bank, and J. Campbell. "Evaluation of Advanced HVAC Technologies." April 2014.

### Recent Invited Presentations

Hicks, Amalia, M. Garofano, J. Quinnell, and S. Hackel. "Opportunities for Improving the Efficiency and Operation of Building Ventilation." Presented at the Energy Design Conference and Expo, Duluth, Minnesota, February 2016.

Hicks, Amalia, E. Mueller, and S. Morner. "Energy Conservation Potential of Displacement Ventilation in Minnesota Climate Conditions." Presented at the Clean Energy Resource Teams Conference, St. Cloud, Minnesota, March 2015.

Hicks, Amalia and S. Morner. "ASHRAE Design Guide for Dedicated Outdoor Air Systems." Presented at American Society of Heating, Refrigeration, and Air-Conditioning Engineers meeting, Chicago, Illinois, January 2015.