Kevin J. Kircher

Assistant Professor, Mechanical Engineering (2022–)
Assistant Professor (by courtesy), Electrical and Computer Engineering (2023–)
Purdue University
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Research interests: Energy and algorithms

I work on control, optimization, and data science methods for energy systems, focusing on buildings and the power grid. I'm particularly interested in new technologies for efficient electric heating.

Education

2019–22	Postdoctoral Associate in Electrical Engineering and Computer Science, **Massachusetts Institute of Technology**
2019	PhD in Mechanical Engineering, **Cornell University**
2016	MS in Mechanical Engineering, **Cornell University**
2009	MEng in Engineering Physics, **Cornell University**
2008	BS in Applied Mathematics and Physics, **University of Wisconsin–Milwaukee**

Publications

Journal articles

19. A.J. Khabbazi, E.N. Pergantis, L.D. Reyes Premer, P. Papageorgiou, A.H. Lee, J.E. Braun, G.P. Henze and **K.J. Kircher**. Lessons learned from field demonstrations of model predictive control and reinforcement learning for residential and commercial HVAC: A review. In review.

18. Priyadarshan, C. Crozier, K. Baker and **K.J. Kircher**. Distribution grids may be a barrier to residential electrification. In review.

17. E.N. Pergantis, L.D. Reyes Premer, A.H. Lee, Priyadarshan, H. Liu, D. Ziviani, E.A. Groll and **K.J. Kircher**. Protecting residential electrical panels and service through model predictive control: A field study. *Applied Energy* (2025).

16. G.P. Henze, **K.J. Kircher** and J.E. Braun. Why has advanced commercial HVAC control not yet achieved its promise? *Journal of Building Performance Simulation* (2024).

15. E.N. Pergantis, P. Dillhon, L.D. Reyes Premer, A.H. Lee, D. Ziviani, E.A. Groll and **K.J. Kircher**. Humidity-aware model predictive control for residential air conditioning: A field study. *Building and Environment* (2024).

14. L. Semmelmann, M. Hertel, **K.J. Kircher**, R. Mikut, V. Hagenmeyer and C. Weinhardt. The impact of heat pumps on day-ahead energy community load forecasting. *Applied Energy* 368 (2024).

13. E.N. Pergantis, Priyadarshan, N. Al Theeb, P. Dillhon, J.P. Ore, D. Ziviani, E.A. Groll and **K.J. Kircher**. Field demonstration of predictive heating control for an all-electric house in a cold climate. *Applied Energy* 360 (2024).

12. A.O. Aderibole, **K.J. Kircher**, E.K. Saathoff, S.B. Leeb and L.K. Norford. Adaptive power line communication for low-data-rate control and sensing. *IEEE Transactions on Power Delivery* 38 (2023): 2213–2223.

11. A.O. Aderibole, E.K. Saathoff, **K.J. Kircher**, A.W. Langham, L.K. Norford and S.B. Leeb. Characterizing low-data-rate power line communication channels. *IEEE Transactions on Instrumentation and Measurement* 72 (2022): 1–12.

10. Z. Zhang, **K.J. Kircher**, Y. Cai, J.G. Brearly, D. Birge and L.K. Norford. Mitigating peak load and heat stress under heat waves by optimizing thermostat setpoint and fan speed schedules. *Journal of Building Performance Simulation* 16.4 (2022): 493–506.

9. A.O. Aderibole, **K.J. Kircher**, S.B. Leeb and L.K. Norford. Distributed load control using reliable low-bandwidth power line communication. *IEEE Access* 10 (2022): 50242–50253.

8. **K.J. Kircher**, A.O. Aderibole, L.K. Norford and S.B. Leeb. Distributed peak shaving for small aggregations of cyclic loads. *IEEE Transactions on Power Delivery* 37 (2022): 4315–4325.

7. A.O. Aderibole, E.K. Saathoff, **K.J. Kircher**, S.B. Leeb and L.K. Norford. Power line communication for low-bandwidth control and sensing. *IEEE Transactions on Power Delivery* 37 (2021): 2172–2181.

6. **K.J. Kircher** and K.M. Zhang. Heat purchase agreements could lower barriers to heat pump adoption. *Applied Energy* 286 (2021): 116489.

5. **K.J. Kircher**, W. Schaefer and K.M. Zhang. A computationally efficient, high-fidelity testbed for building climate control. *ASME Journal of Engineering for Sustainable Buildings and Cities* 2 (2020): 1–22.

4. Z. Lee, K. Gupta, **K.J. Kircher** and K.M. Zhang. Mixed-integer model predictive control of variable-speed heat pumps. *Energy and Buildings* 198 (2019): 75–83.

3. **K.J. Kircher** and K.M. Zhang. On the lumped capacitance approximation accuracy in RC network building models. *Energy and Buildings* 104 (2015): 454–462.

2. S.N. Palacio, **K.J. Kircher** and K.M. Zhang. On the feasibility of providing power system spinning reserves from thermal storage. *Energy and Buildings* 104 (2015): 131–138.

1. **K.J. Kircher**, X. Shi, S. Patil and K.M. Zhang. Cleanroom energy efficiency strategies: Modeling and simulation. *Energy and Buildings* 42 (2010): 282–289.

Conference papers

21. E.N. Pergantis, C. Liang, A.A.M. Bani Issa, J. Cai, D. Ziviani and **K.J. Kircher**. Frost accumulation reduction in air-source heat pumps using load regulation. *CLIMA* (2025).

20. N. Al Theeb, A.A.M. Bani Issa and **K.J. Kircher**. Using small amounts of resistance heat to improve thermal comfort in residential air-source heat pumps. *ASHRAE Winter Conference*, 2025.

19. E.N. Pergantis, L.D. Reyes Premer, A.H. Lee, H. Liu, D. Ziviani, E.A. Groll and **K.J. Kircher**. Protecting residential electrical infrastructure through advanced control: The first field results. *International High Performance Buildings Conference*, 2024.

18. A.J. Khabbazi, E.N. Pergantis, L.D. Reyes Premer, A.H. Lee, J. Ma, G.P. Henze and **K.J. Kircher**. What have we learned from field demonstrations of advanced commercial HVAC control? *International High Performance Buildings Conference*, 2024.

17. L.D. Reyes Premer, L. Semmelmann, E.N. Pergantis, D. Ziviani, E.A. Groll and **K.J. Kircher**. A predictive heat pump water heater controller in a residential building: A field study. *International High Performance Buildings Conference*, 2024.

16. F. Wu, H. Devarapalli, H. Lee, J. Go, H. Kim, P. Karava, J.E. Braun, D. Ziviani, W.T. Horton, **K.J. Kircher** and E.A. Groll. Investigating occupant thermostat adjustment behavioral patterns in different heat pump operation modes: A field experiment. *International High Performance Buildings Conference*, 2024.

15. D. Mah, H. Cai, **K.J. Kircher** and A. Tzempelikos. Real-time estimation of heat gains for demand-driven building control using deep learning. *International High Performance Buildings Conference*, 2024.

14. A. Farha, D. Ziviani, **K.J. Kircher** and E.A. Groll. Performance comparison of a residential split-system heat pump powered on AC versus DC power. *International High Performance Buildings Conference*, 2024.

13. E.N. Pergantis, J. Park, Priyadarshan, T.J. Bird, D. Ziviani and **K.J. Kircher**. Learning the thermal dynamics of a residential building from limited data. *International High Performance Buildings Conference*, 2024.

12. L. Sriram, A. Farha, A. Hoess, D. Ziviani, E.A. Groll, E.N. Pergantis and **K.J. Kircher**. Development and comparative analysis of a power-over-ethernet (PoE) DC lighting system for residential buildings. *International High Performance Buildings Conference*, 2024.

11. D. Mah, A. Tzempelikos and **K.J. Kircher**. Real-time detection of internal and solar gains toward demand-driven building control using deep learning. *ASHRAE Winter Conference*, 2024.

10. E.N. Pergantis, L.D. Reyes Premer, Priyadarshan, A.H. Lee, P. Dillhon, D. Ziviani, E.A. Groll and **K.J. Kircher**. Latent and sensible model predictive controller demonstration in a house during cooling operation. *ASHRAE Winter Conference*, 2024.

9. Priyadarshan, E.N. Pergantis, C. Crozier, K. Baker and **K.J. Kircher**. EDGIE: A simulation test-bed for investigating the impacts of building and vehicle electrification on distribution grids. *Hawai'i International Conference on System Sciences (HICSS)*, 2024.

8. E.N. Pergantis, A.S. Sangamnerkar, Priyadarshan, J.P. Ore, P. Dillhon, D. Ziviani, E.A. Groll and **K.J. Kircher**. Sensors, storage and algorithms for practical optimal controls in residential buildings. *ASHRAE Annual Conference*, 2023.

7. **K.J. Kircher**, Y. Cai, L.K. Norford and S.B. Leeb. Controlling big, diverse, nonlinear load aggregations for grid services by adjusting device setpoints. *IEEE Conference on Decision and Control* (CDC), 2021.

6. Y. Cai, J. Burek, S. Das, J.R. Gregory, L.K. Norford, J. Wang and **K.J. Kircher**. Reducing greenhouse gas emissions by optimizing room temperature set-points. *International Conference on Machine Learning* (ICML): Workshop on Tackling Climate Change with Machine Learning, 2021.

5. **K.J. Kircher** and K.M. Zhang. Sample-average model predictive control of uncertain linear systems. *IEEE Conference on Decision and Control* (CDC), 2016.

4. **K.J. Kircher** and K.M. Zhang. Testing building controls with the BLDG toolbox. *American Control Conference* (ACC), 2016. Invited paper.

3. **K.J. Kircher** and K.M. Zhang. Model predictive control of thermal storage for demand response. *American Control Conference* (ACC), 2015. Invited paper.

2. **K.J. Kircher**, G. Ghatikar, S. Greenberg, D. Watson, R. Diamond, D. Sartor, C. Federspeil, A. McEachern and T. Owen. Toward the holy grail of perfect information: Lessons learned from implementing an energy information system in a commercial building. *ACEEE Summer Study on Energy Efficiency in Buildings*, 2010.

1. P.A. Mathew, R. Clear, **K.J. Kircher**, T. Webster, K.H. Lee and T. Hoyt. Advanced benchmarking for complex building types: Laboratories as an exemplar. *ACEEE Summer Study on Energy Efficiency in Buildings*, 2010.

PhD thesis

K.J. Kircher. Heat pump aggregation, optimization and control. Cornell University (2019).

This thesis develops an economic model that could accelerate adoption of efficient electric heat pumps for low-carbon heating and cooling. It also develops optimization and control methods that let heat pumps provide reliability services to the power grid, unlocking new revenues and facilitating renewable integration.

Course notes

6. **K.J. Kircher**. "Distributed energy resources," created for Purdue ME 597.
5. **K.J. Kircher** and E.Y. Bitar. "Robust and stochastic optimization," based on Cornell ECE 6990.
4. **K.J. Kircher** and A.S. Lewis. "Convex analysis," based on Cornell ORIE 6328.
3. **K.J. Kircher** and D.P. Williamson. "Linear programming," based on Cornell ORIE 6300.
2. **K.J. Kircher** and S.G. Henderson. "Monte Carlo simulation," based on Cornell ORIE 6580.
1. **K.J. Kircher** and M.L. Psiaki. "Model-based estimation," based on Cornell MAE 6760.

Patents

4. Y. Lin, L.K. Norford, A. Botterud, J.R. Gregory, J. Higgins, D.H. Green, **K.J. Kircher** and F. Selvaggio. "Multi-space building control optimization based on graph learning and reinforcement learning." US Patent App. 63/665,248 (2024).
3. **K.J. Kircher**, E.N. Pergantis, L.D.R. Premer and D. Ziviani. "Smart controls for electrical distribution protection in homes." US Patent App. 63/566,019 (2024).
2. **K.J. Kircher**, N. Al Theeb, A.A.M Bani Issa and E.N. Pergantis. "Comfort control system and method." US Patent App. 63/627,421 (2024).

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1. S.B. Leeb, L.K. Norford, E.K. Saathoff, A.O. Aderibole and **K.J. Kircher**. "Power line communication for low-bandwidth control and sensing." US Patent 11,888,548 (2024).

Awards

2024	Second place, Best Student Paper, International High Performance Buildings Conference
2014	Hydro Research Foundation Fellowship
2014	Honorable mention, Link Foundation Energy Fellowship
2012	Sibley PhD Fellowship, Cornell University

Teaching

Sp24, Sp25	Distributed Energy Resources course creator & instructor, Purdue University
F22–F23, F24	Thermodynamics I instructor, Purdue University
Sp14–Sp15	Teaching assistant trainer, Cornell University College of Engineering *Trained hundreds of graduate student teaching assistants from 14 departments.*
F13	Multivariable Calculus teaching assistant, Cornell University
Sp13	Dynamics teaching assistant, Cornell University
Sp07, Sp08	Physics in Everyday Life teaching assistant, University of Wisconsin–Milwaukee
F05–Sp07	Mathematics tutor, University of Wisconsin–Milwaukee

Funding

Total KJK share at Purdue: 5.5 student-years.

12. Smart electrification for rural co-operatives (PI). Co-authored with Jie Cai, Panagiota Karava, Vassilis Kekatos, Xiaonan Lu, and Davide Ziviani. DOE Connected Communities 2.0. KJK share: TBD.

11. Pioneering DC-enabled equipment and predictive controls for home energy management systems (PI). Co-authored with Eckhard Groll and Davide Ziviani. Center for High Performance Buildings. KJK share: **One student-year** (1/2025–1/2026).

10. Building a low-cost residential thermal energy storage system for both heating and cooling. Co-authored with Eckhard Groll (PI) and Davide Ziviani. Center for High Performance Buildings (1/2025–1/2026).

9. Assessing and improving the performance of air-source heat pumps using laboratory and community testbeds. Co-authored with Panagiota Karava (PI), James Braun, Travis Horton, and Davide Ziviani. Center for High Performance Buildings (1/2025–1/2026).

8. Development of an artificial intelligence solution for residential heating and cooling equipment sizing to reduce equipment oversizing. Co-authored with Mark Ladd of RookStack (PI). DOE Small Business Technology Transfer. KJK share: **One student-year** (8/2024–8/2025).

7. Optimization of low-cost predictive controls in residential buildings and the DC House. Co-authored with Eckhard Groll (PI) and Davide Ziviani. Center for High Performance Buildings (1/2024–1/2025).

6. Comparisons of occupant satisfaction and energy efficiency of comfort delivery approaches and heating equipment using the Human-Building Interactions Laboratory. Co-authored with Panagiota Karava (PI), James Braun, Travis Horton, and Davide Ziviani. Center for High Performance Buildings (1/2024–1/2025).

5. Technoeconomic decision-making framework for thermal and electric energy storage in net zero energy systems. Co-authored with Rebecca Ciez (PI), Eckhard Groll, and Davide Ziviani. Center for High Performance Buildings (1/2024–1/2025).

4. Unlocking the potential of Ray W. Herrick Laboratories as a testbed for advanced whole-building HVAC control (PI). Co-authored with Thanos Tzempelikos, Jie Ma, and James Braun. Center for High Performance Buildings. KJK share: **One-half student-year** (1/2024–6/2024).

3. Improving air-source heat pump thermal comfort by modifying equipment and controls (PI). Co-authored with Davide Ziviani. Carrier Global Corporation. KJK share: **One student-year** (1/2023–1/2024).

2. Characterizing and mitigating the impacts of home and vehicle electrification on distribution grids (PI). Co-authored with James Braun. Center for High Performance Buildings. KJK share: **Two student-years** (1/2023–1/2025).

1. Smart heat: Aggregating renewable-electric-heating-thermal-storage systems for grid services. Co-authored with K. Max Zhang (PI) and Justin Dobbs. NSF Energy, Power, Controls and Networks grant 1711546. (8/2017–8/2020).

Invited talks

32. University of Massachusetts Lowell Mechanical & Industrial Engineering Seminar, Lowell, MA. *Control opportunities in electrified housing.* March, 2025.

31. University of Michigan College of Engineering Control Seminar, Ann Arbor, MI. *Control opportunities in electrified housing.* November, 2024.

30. IEEE ECCE Tutorial on DC Distribution Systems and Microgrids, Phoenix, AZ. *The DC Nanogrid House.* October, 2024.

29. MIT EECS Academic Job Search Seminar, Cambridge, MA. *My prof. job search.* October, 2024.

28. Herrick International Conferences Short Course, West Lafayette, IN. *Climate change and heat pumps.* July, 2024.

27. Purdue University Institute for a Sustainable Future, West Lafayette, IN. *Decarbonizing Purdue.* February, 2024.

26. Hawai'i International Conference on System Sciences, Honolulu, HI. *EDGIE: A Matlab toolbox for emulating the distribution grid impacts of electrification.* January, 2024.

25. INFORMS Annual Meeting, Phoenix, AZ. *Equity benefits of strategic home electrification.* October, 2023.
24. Purdue University Herrick Energy Seminar, West Lafayette, IN. *Thermal comfort and air-source heat pump controls.* September, 2023.
23. Purdue University Institute for Control, Optimization, and Networks, West Lafayette, IN. *Learning, optimization, and control for distributed energy resources.* August, 2023.
22. Duke Energy and Itron, West Lafayette, IN. *Data and decisions for distributed energy resources.* August, 2023.
21. Purdue University School of Electrical and Computer Engineering, West Lafayette, IN. *Reducing electricity demand peaks from populations of on/off loads.* November, 2022.
20. Herrick Laboratories Industrial Advisory Committee, West Lafayette, IN. *Toward smart electrification.* October, 2022.
19. MIT EECS Academic Job Search Seminar, Cambridge, MA. *My prof. job search.* September, 2022.
18. U.S. Department of Energy Loan Programs Office, Washington, D.C. *Third-party ownership models for financing and aggregating electric heat pumps.* March, 2022.
17. Carnegie Mellon University Department of Electrical and Computer Engineering, Pittsburgh, PA. *Smart electrification: How control systems in buildings can accelerate decarbonization.* March, 2022.
16. University of Vermont Department of Electrical and Biomedical Engineering, Burlington, VT. *Smart electrification: How control systems in buildings can accelerate decarbonization.* March, 2022.
15. Purdue University Department of Mechanical Engineering, West Lafayette, IN. *Smart electrification: How control systems in buildings can accelerate decarbonization.* February, 2022.
14. MIT Department of Mechanical Engineering and Schwarzman College of Computing, Cambridge, MA. *Planet Earth has a fever... but better building control software can help.* January, 2022.
13. IEEE Conference on Decision and Control, Austin, TX. *A general, scalable grid-service control framework for aggregated electrical devices.* December, 2021.
12. Tune-In on MIT's Climate Action Plan for the Decade, Cambridge, MA. *How artificial intelligence can reduce campus carbon emissions.* November, 2021.
11. MIT Department of Facilities, Cambridge, MA. *Shifting electrical load by perturbing zone air temperature setpoints.* February, 2020.
10. Schneider Electric, Cambridge, MA. *Shifting load by perturbing temperature setpoints.* January, 2020.
9. Cornell University Department of Mechanical and Aerospace Engineering, Ithaca, NY. *Heat purchase agreements could lower barriers to heat pump adoption.* July, 2019.
8. IEEE Conference on Decision and Control, Las Vegas, NV. *Sample-average approximation in stochastic model predictive control.* December, 2016.
7. HydroVision International, Minneapolis, MN. *Operating a Hawai'ian microgrid without fuel.* July, 2016.
6. American Control Conference, Boston, MA. *Testing building controls in MATLAB with the BLDG toolbox.* July, 2016.
5. Cornell University Economics and Engineering of Electricity Research Group, Ithaca, NY. *Flexible demand from the building operator's perspective.* October, 2015.
4. Cornell University Energy Seminar, Ithaca, NY. *How can buildings help the grid?* September, 2015.
3. HydroVision International, Portland, OR. *Pumped hydro controls for a Hawai'ian microgrid.* July, 2015.
2. American Control Conference, Chicago, IL. *Economic MPC of thermal storage for demand response.* July, 2015.
1. University of Hawaii at Hilo. *A little island on the Big Island: UH-Hilo microgrid design.* May, 2013.

Media

February 2025	Purdue rural electrification project to help upgrade home utilities. **CBS 4** and **Fox 59**, Indianapolis.
January 2025	Is Purdue hiding its emissions data? Students and faculty say reports are limited, unclear. **The Exponent**.
November 2024	UK heating experts win a long-running battle on boiler efficiency. **The Reengineer**.
November 2024	Electrifying your home can limit greenhouse effect. **WDVM Washington, D.C.**, **WTTK Indianapolis**, **KDVR Denver**, **WRIC Richmond**, **WLFI Lafayette**, **WTHI Terre Haute**.
September 2024	Cold climate heat pumps in the US: Updates from the refrigerant to the electrical grid. **IEA Heat Pumping Technologies Magazine**.
July 2024	The hunt for the most efficient heat pump in the world. **Wired**.
June 2024	Predictive heat pump thermostat could reduce energy bills. **ACHR News**.
March 2024	Where heat pumps win – and where they lose. **Heatmap News**.
February 2024	A market for 24/7 clean power might look something like this. **Heatmap News**.
January 2024	Can this city's microgrid plan skirt the traditional utility model? **Latitude Media**.
November 2023	Heat pumps – the future of home heating and cooling. **Her House, Her Home** podcast.
July 2023	Europe struggles to heat homes without cooking the planet. **Clean Energy Wire**.
April 2023	6 things to know about heat pumps, a climate solution in a box. **NPR.org**.
March 2023	The new incentive for Americans to get heat pumps as a key climate solution. **All Things Considered**.
February 2023	Talking devices could reduce odds of electrical grid breakdowns. **The American Society of Mechanical Engineers**.
November 2022	Orchestrating chatter between appliances could save a surprising amount of energy. **Anthropocene**.
August 2022	Experts: Cash incentives in climate bill could revolutionize U.S. homes, 1 HVAC at a time. **USA Today**.
May 2022	The U.S. is addicted to gas heating. A new bill may make going electric the easy choice. **HuffPost**.
April 2022	How does a heat pump work? **Carbon Switch**.
April 2021	Unlocking home electrification with heat pumps. **The Energy Gang** podcast.

Mentoring

As a Purdue professor

2024–	Panagiotis Papageorgiou, PhD (co-chair with Jie Cai), Mechanical Engineering
2023–	Aaron Farha, PhD (co-chair with Eckhard Groll), Mechanical Engineering
2023–	Arash Khabbazi, PhD (chair), Mechanical Engineering
2023–	Levi Reyes Premer, PhD (co-chair with Davide Ziviani), Mechanical Engineering
2023–	Nadah Al Theeb, PhD (chair), Mechanical Engineering
2022–	Priyadarshan, PhD (chair), Mechanical Engineering
2024–	Jose Sandoval Hernandez, MS (chair), Mechanical Engineering
2024–	Alex Lee, MS (chair), Mechanical Engineering
2025–	Pranav Vijayanand, BS, Nuclear Engineering
2024–	Zachary Tan, BS, Mechanical Engineering
2024–	Shubha Vijayaraj, BS, Mechanical Engineering
2024–	Abhinav Sarangan, BS, Mechanical Engineering
2024–	Andrew Beck, BS, Mechanical Engineering
2023–	Liam Johnson, BS, Mechanical Engineering
2023–	Jude Lin, BS, Mechanical Engineering
2023–	Lokesh Sriram, BS, Mechanical Engineering
2022–24	Elias Pergantis, PhD (co-chair with Davide Ziviani), Mechanical Engineering *Next position: Lead residential R&D engineer at Trane*
2024	Jose Sandoval Hernandez, BS, Mechanical Engineering *Next position: Mechanical engineering MS student at Purdue*
2023–24	Sophia Evers, BS, Nuclear Engineering *Next position: TBD*
2023–24	Jacob Aldridge, BS, Computer Science *Next position: TBD*
2023–24	Justin Chang, BS, Mechanical Engineering *Next position: TBD*
2023–24	Aadit Kumar, BS, Mechanical Engineering *Next position: TBD*
2023–24	Alex Lee, BS, Civil Engineering and Computer Science *Next position: Mechanical engineering MS student at Purdue*
2023–24	Brendan Corban, BS, Mechanical Engineering *Next position: Building automation engineer at Siemens*

Committee memberships: Yash Mathur (ME MS 2024–), Yuanzhi Yang (ME PhD 2024–), Tchato Vidal (ME PhD 2024–), Ranadip Saha (ME PhD 2023–), Feng Wu (ArchE PhD 2023–24), Dongjun Mah (CE PhD 2023–24), Aditya Nur (ME PhD 2022–), Ara Bolanger (ME MS 2022–24), Ting-Chun Kuo (ArchE PhD 2022–)

As an MIT postdoc

2021–22	Morgan Santoni-Colvin, SM, Technology and Policy Program *Next position: Associate consultant at Energy and Environmental Economics*
2021–22	Stella Zhujing Zhang, SM, Building Technology *Next position: Civil engineering PhD student at EPFL*
2021–22	Julia Wang, SB/SM, Computer Science *Next position: Machine learning engineer at Meta*
2019–22	Yuan Cai, SM, Computer Science and Building Technology *Next position: Associate consultant at Bain & Company*
2019–22	Adedayo Aderibole, PhD, Electrical Engineering and Computer Science *Next position: Systems engineer at Google*

As a Cornell PhD student

2017–18	Kartikay Gupta, MS, Mechanical Engineering *Next position: Flight dynamics engineer at SES Satellites*
2016	Kevin Leong-Tiwanak, MEng, Systems Engineering *Next position: Design engineer at SepiSolar*
2015–16	Sean Hidaka, MEng, Mechanical Engineering *Next position: Mechanical engineer at Elara Engineering*
2015	Walter Schaefer, MEng, Mechanical Engineering *Next position: Project engineer at Energy and Resource Solutions*
2015	Eric Hui Fat Tse, BS, Mechanical Engineering and Economics *Next position: Business analyst at Indus Valley Partners*
2015	Stefan Rauscher, BS, RWTH Aachen Mechanical Engineering *Next position: Project engineer at TLK Energy*
2014–15	Julius Scheuber, BS, RWTH Aachen Mechanical Engineering *Next position: Co-founder of ENLYZE*
2014–15	Siddharth Deshpande, MEng, Mechanical Engineering *Next position: Energy analyst at EnerNOC*

Academic service

Workshop organizing:

July 2024	Intelligent Building Operations Workshop co-chair, West Lafayette, IN
September 2023	Intelligent Building Operations Workshop co-chair, Boulder, CO

Seminar organizing: Herrick Energy Seminar creator (2023) and coordinator (2023–), Purdue University

Society memberships: IEEE (Power & Energy Society and Control Systems Society), ASHRAE

Club advising: Faculty advisor, Sustainable Energy Club of Purdue

Reviewing: Natural Sciences and Engineering Research Council of Canada; Applied Energy; Joule; IEEE Transactions on Power Systems; IEEE Transactions on Smart Grid; IEEE Transactions on Power Delivery; Annual Reviews in Control; Electric Power Systems Research; Energy and Buildings; Renewable Energy; Sustainable Energy, Grids and Networks; Journal of Building Performance Simulation; Journal of Cleaner Production; Control Engineering Practice; Science and Technology for the Built Environment; Earth's Future; IEEE Conference on Decision and Control; American Control Conference; Hawai'i International Conference on System Sciences

Select employment and volunteering

2009–10	Building Technologies research associate, Lawrence Berkeley National Laboratory *Deployed sensors throughout a 90,000 ft^2 office building to collect granular energy data.*
2009	Volunteer, Amanecer solar oven project, Totogalpa, Nicaragua *Helped design and build solar ovens for smoke-free cooking with a rural women's cooperative.*
2008	Volunteer, AguaClara water supply project, Cuatro Comunidades, Honduras *Helped design and build gravity-powered water filtration plants in remote villages.*