

Inequalities Across Cooling and Heating in Households: Energy Equity Gaps

Luling Huang ^{a,b}, Destenie Nock ^{c,d}, Shuchen Cong ^c, Yueming (Lucy) Qiu ^e

^a Wilton E. Scott Institute for Energy Innovation, Carnegie Mellon University, USA

^b University Libraries, Carnegie Mellon University, USA

^c Engineering and Public Policy, Carnegie Mellon University, USA

^d Civil and Environmental Engineering, Carnegie Mellon University, USA

^e School of Public Policy, University of Maryland at College Park, USA

Supported by: Alfred P. Sloan Foundation, Council on Library and Information Resources, and National Science Foundation

#BECC2023



Energy Limiting Behavior

Unable or unwilling to consume sufficient energy to reach a desired level of comfort



Photo by Gustavo Zambelli on [Unsplash](#)

#BECC2023



Health and Space Cooling/Heating

Thermal discomfort



Negative health impacts

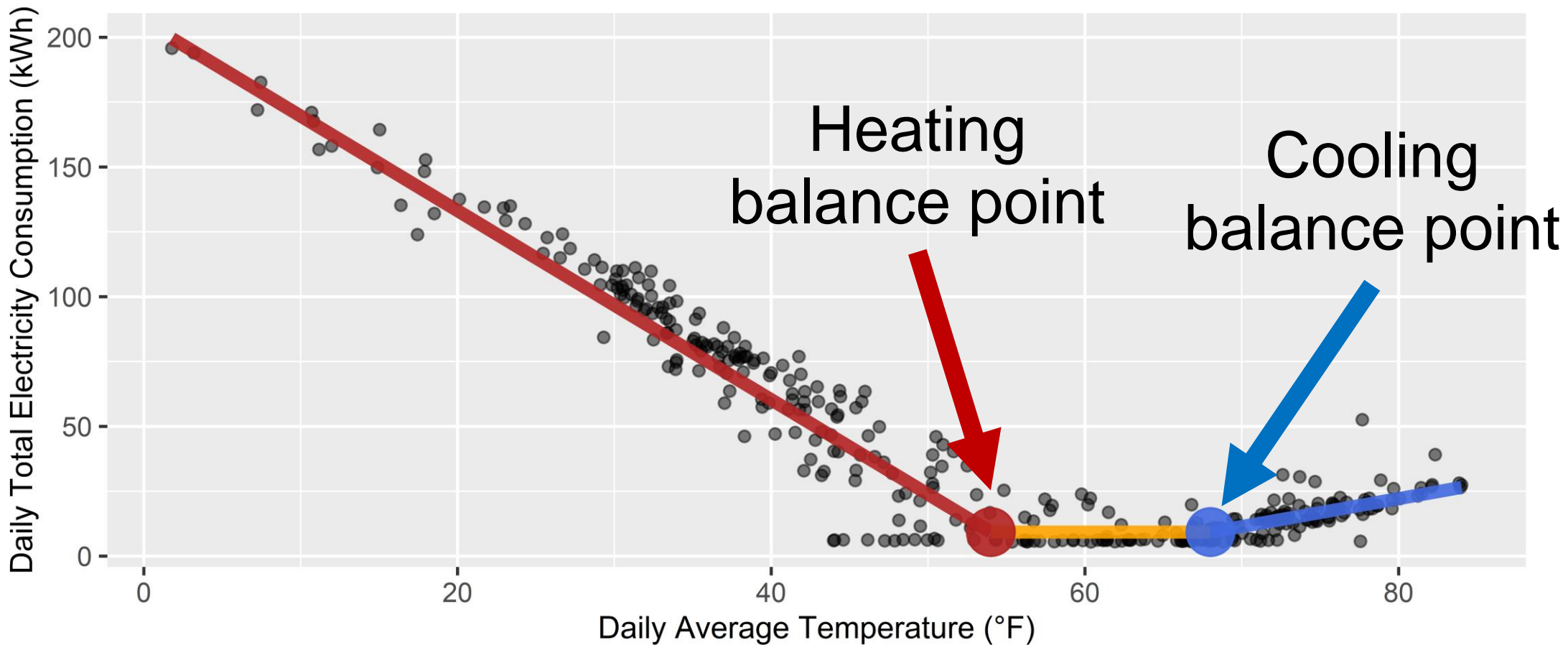


Photo by Will on [Unsplash](#)

#BECC2023



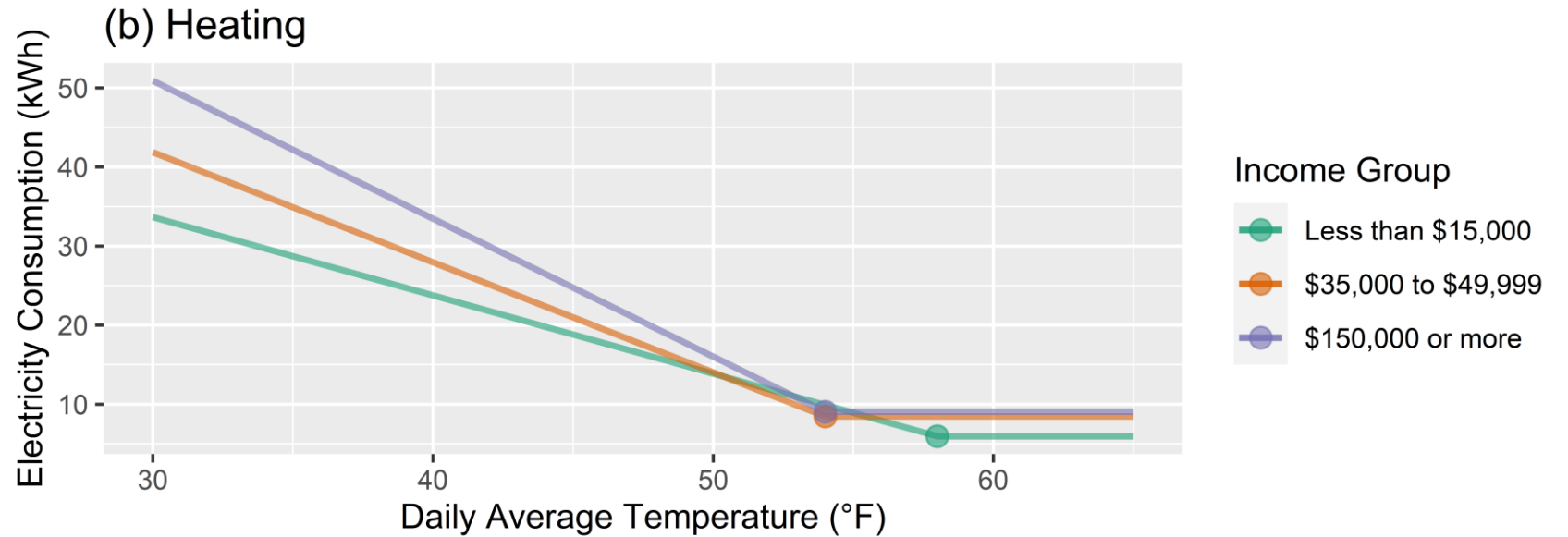
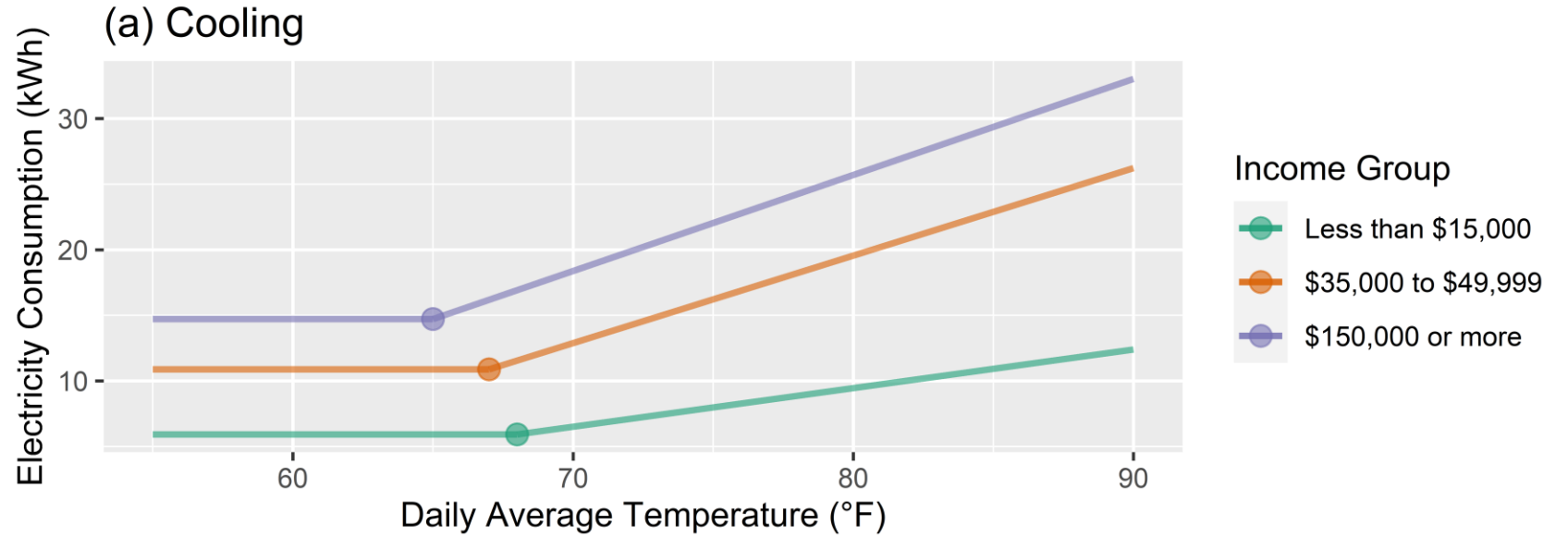
Balance Points



#BECC2023



Main Findings



Policy Implications

- Combine our metric with expenditure-based measures to identify energy-insecure households
- Provide sustained funding at the federal and state levels to home energy assistance and weatherization programs
- Address income inequality among other inequalities



For more information

- Paper published in *Energy Policy* (open access):
<https://doi.org/10.1016/j.enpol.2023.113748>
- Emails:
 - Luling Huang: lulinghuang@cmu.edu
 - Destenie Nock: dnock@andrew.cmu.edu

