RTI INTERNATIONAL

Innovations in Home Energy Use: Directions and Considerations for Intervention

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Human behavior and public information

- Changing human behavior often requires effort to shape *public information environment*.
- How does existing environment facilitate or hamper behavior?
- Can we build and leverage partnerships between organizations and programs?

A project to reduce home energy use

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About Themes Educational Pathways Project Teams Get Involved

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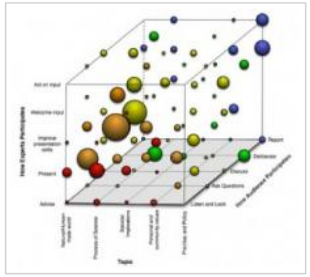
Project Teams » LIT HoMES (Leveraging Individual Transitions into Homeownership to Motivate Energy Savings) (2014-2015)

LIT HoMES (Leveraging Individual Transitions into Homeownership to Motivate Energy Savings) (2014-2015)

As a person moves into homeownership for the first time, there are a variety of decisions for him or her to make about the new dwelling and lifestyle, new information to process and new challenges, including the need to engage with a range of utility bills that may or may not have been previously encountered. During this period, educational information regarding household energy use and potential savings could be provided. Some local organizations have begun to develop programs for people at this stage. But we do not yet know enough about the optimal ways to engage the diverse array of people that comprise first-time homeowners regarding energy behavior.



This project team organized a summit of local government and nonprofit organizations to explore this critical transition point and developed feasible strategies for communicating with people transitioning into home ownership about energy-saving tips and recommendations. Over 40 people attended the summit, including representatives from government, academia and the nonprofit and commercial sectors.

Themes

Energy

Faculty/Staff Team Members

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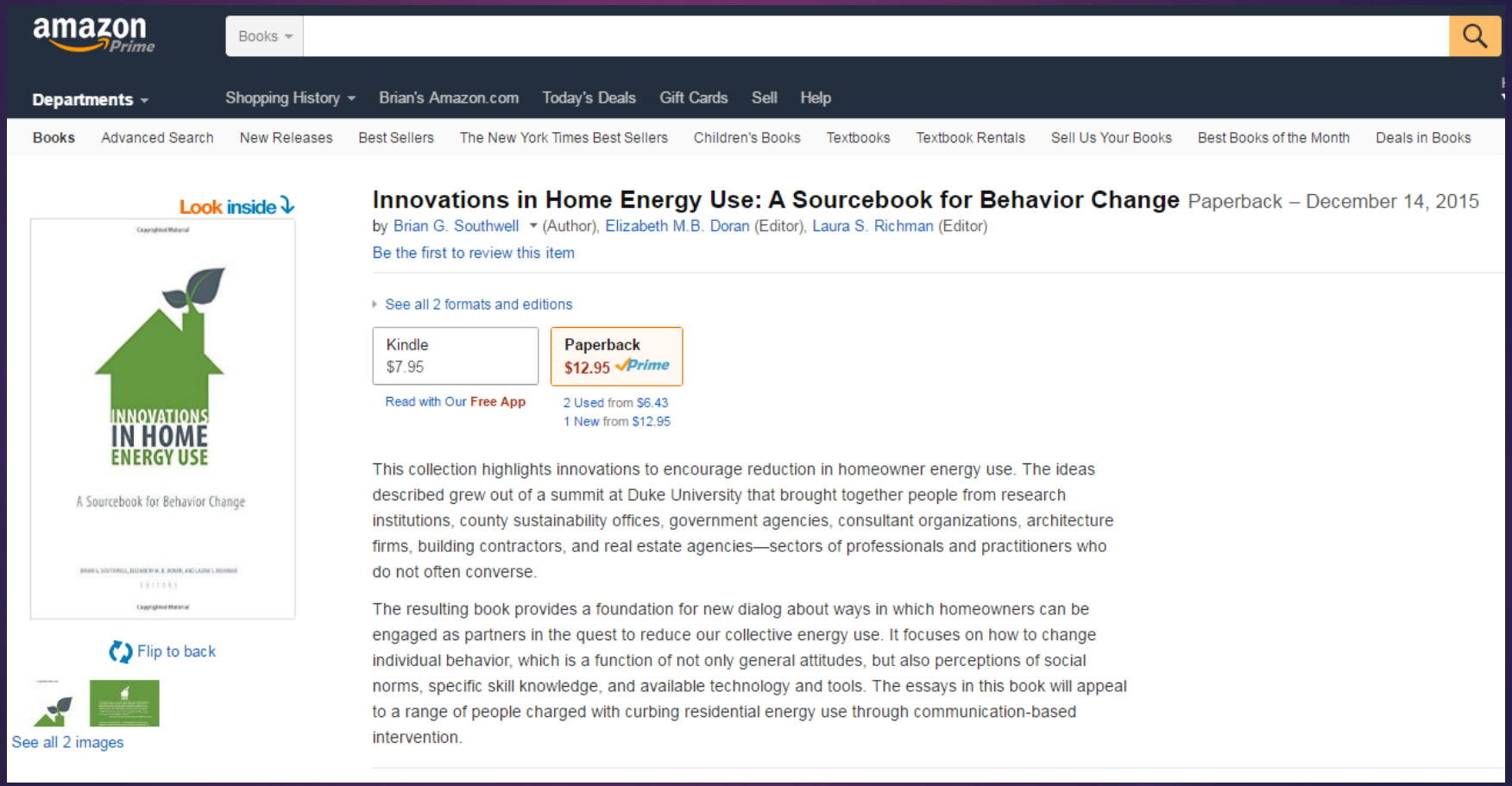
Collaboration across sectors?

A summit on home energy innovations

A sourcebook for behavior change



Generated ideas

- Quantify value of home improvements
- Incorporate energy performance into real estate listings
- Leverage employer-employee relationships
- Integrate hazard mitigation and energy efficiency
- Neighborhood education
- Improve extension program follow-up

Neighborhood education

Curry, D., Squire, C., & Besana, G. (2016). Energy efficiency 101: improving energy knowledge in neighborhoods. In B. G. Southwell, E. M. B. Doran, L. S. Richman (Eds.), *Innovations in home energy use: a sourcebook for behavior change* (pp. 87-107). Research Triangle Park, NC: RTI Press.

- Education for behavior change needs to involve*more than provision of facts*.
- Range of behavioral theories note variety of beliefs that matter, e.g.,Fishbein & Ajzen (2010).
- Skill building and social norms are also key.

Example: Assisting low-income families for energy efficiency

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Short communication

Energy information engagement among the poor: Predicting participation in a free workshop

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Neighborhood education

Natural hazard mitigation: A natural partnership?

Integrate hazard mitigation and energy efficiency

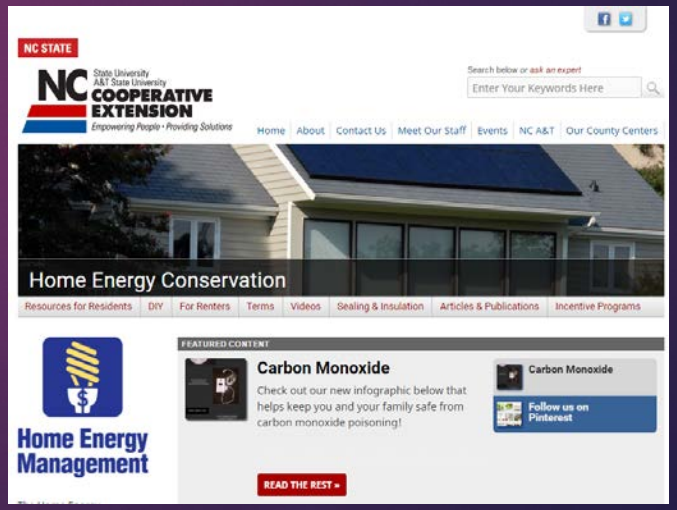
Galik, C. S., Rupert, D., Starkman, K., Threadcraft, J., & Baker, J. S. (2016). Enhancing home energy efficiency through natural hazard risk reduction: linking climate change mitigation and adaptation in the home. In B. G. Southwell, E. M. B. Doran, L. S. Richman (Eds.), *Innovations in home energy use: a sourcebook for behavior change* (pp. 111-140). Research Triangle Park, NC: RTI Press.

- Many mitigation and adaptation programs involve home retrofits.
- Energy efficiency considerations not always primary; construction costs often drive decision-making.

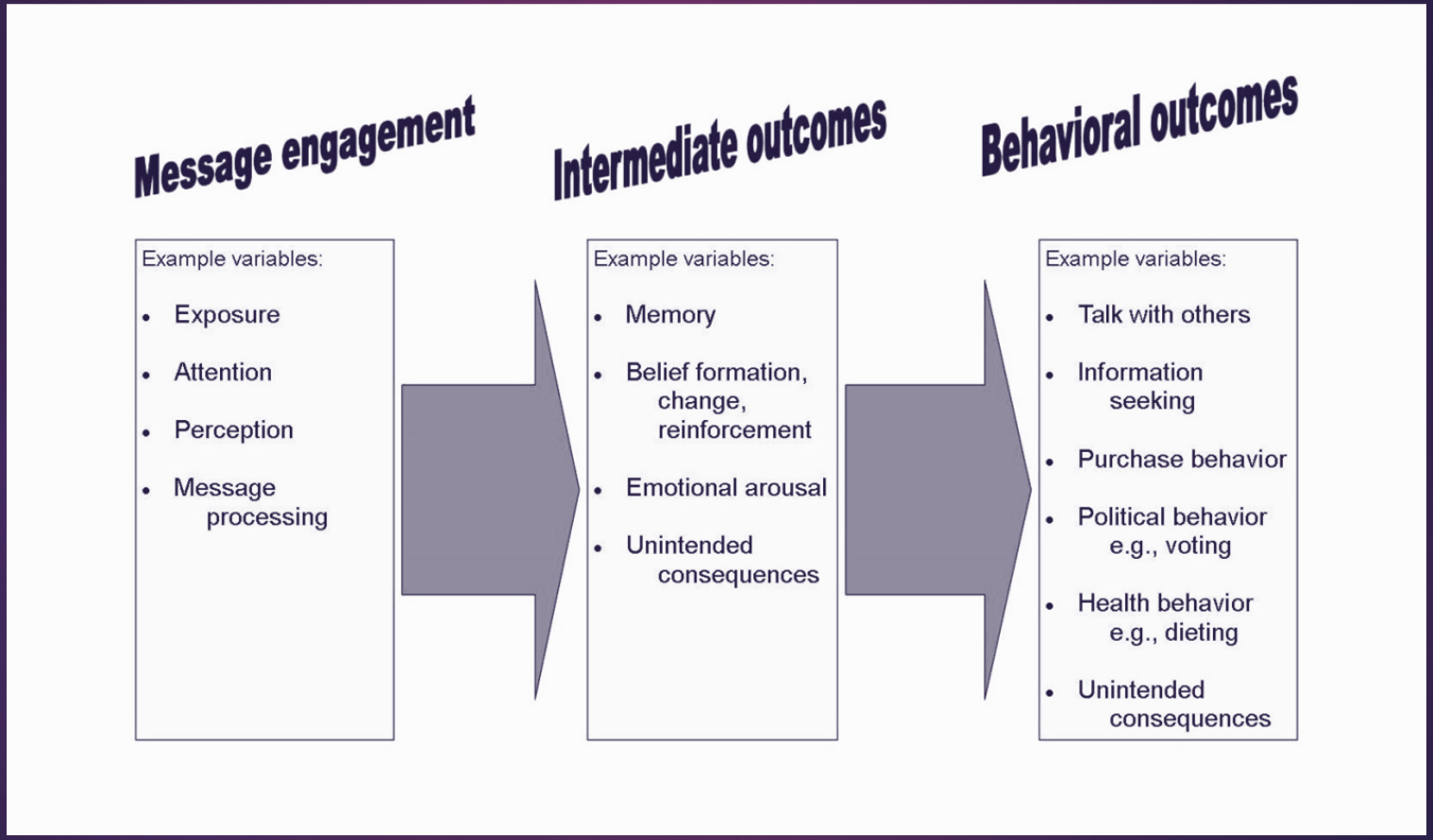
Improve extension programs

Langham, L., Singh, A., Kirby, S., Parvanta, S., Ziemian, M., & Coleman, D. (2016). Increasing the Effectiveness of Residential Energy Efficiency Programs. In B. G. Southwell, E. M. B. Doran, L. S. Richman (Eds.), *Innovations in home energy use: a sourcebook for behavior change* (pp. 169-190). Research Triangle Park, NC: RTI Press.

- Many government extension programs offer home energy audits.
- What happens after the audit?



What can messages do?



A need for decision aids?

Wong-Parodi, G., Kirby, J., Miller, R., & Girard, M. (2016). Considering the effect of incorporating home energy performance ratings into real estate listings. In B. G. Southwell, E. M. B. Doran, L. S. Richman (Eds.), *Innovations in home energy use: a sourcebook for behavior change* (pp. 61-85). Research Triangle Park, NC: RTI Press.

- *Informed* search requires:
  - availability of decision-relevant facts
  - integration of facts and values for consistent preferences
  - active mastery of available information

A helpful information environment?

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EDITORIAL

The Prevalence, Consequence, and Remedy of Misinformation in Mass Media Systems

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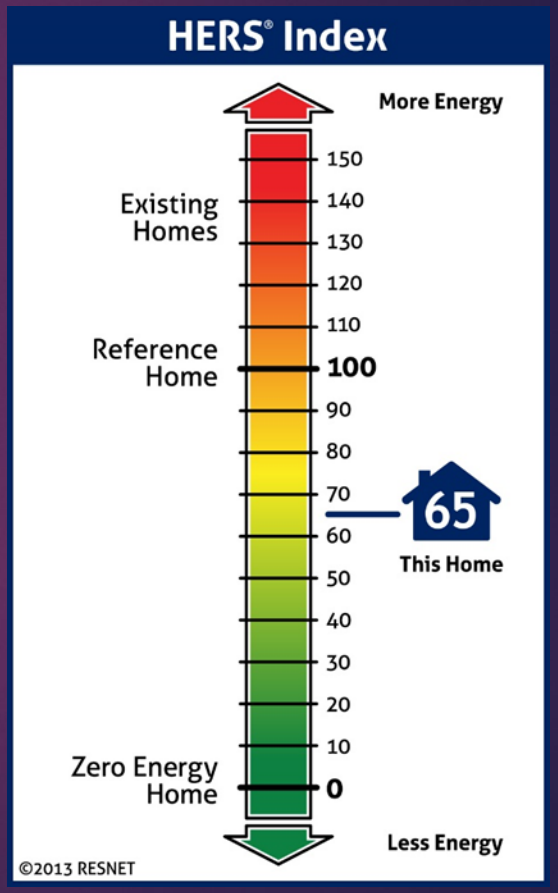
Modify real estate listings

- Opportunity to coordinate with MLS.
  - Some states, like NY, already participate.
- Good metrics already available through RESNET, such as HERS Index.
  - Residential Energy Services Network (RESNET) is independent non-profit.
- RESNET-certified professional uses performance testing and energy modeling software to calculate score.

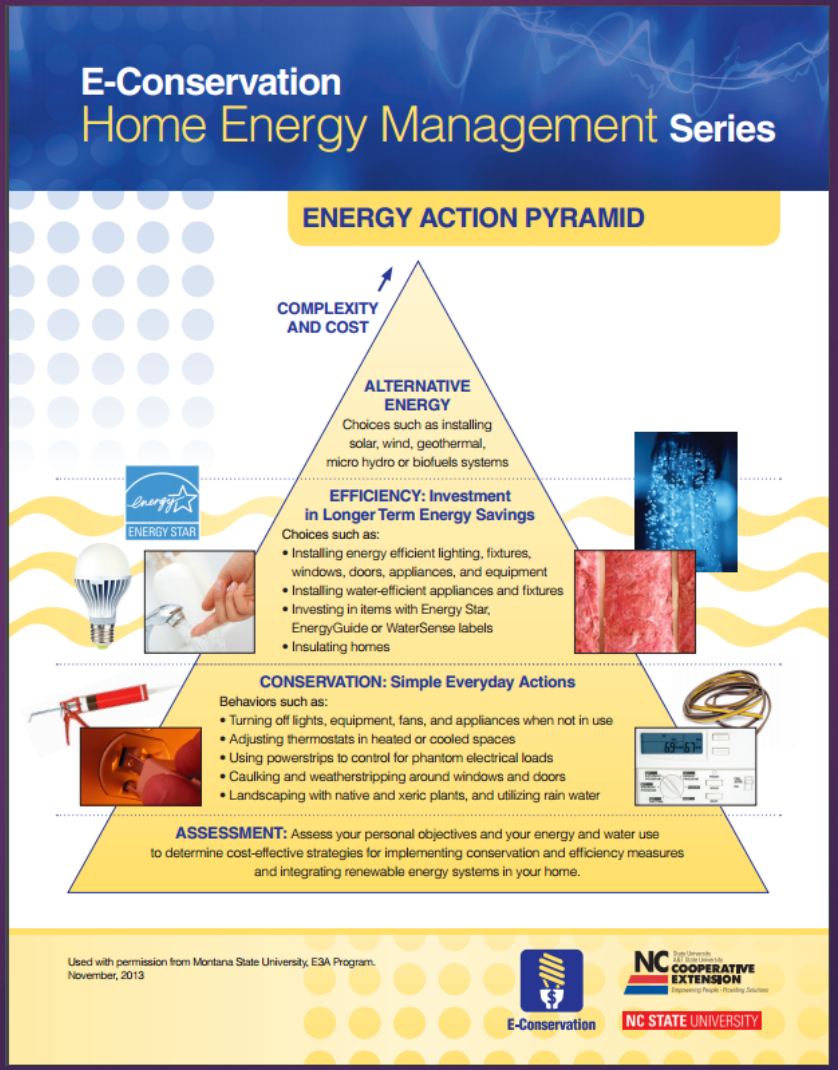


Quantify value of home improvements

Kauffman, D., & Garafola, N. (2016). Quantifying the value of home energy improvements. In B. G. Southwell, E. M. B. Doran, L. S. Richman (Eds.), *Innovations in home energy use: a sourcebook for behavior change* (pp. 31-59). Research Triangle Park, NC: RTI Press.

- Lack of easily understood metrics for value of energy savings complicates decision-making for home improvements.

Sufficient information?



Leverage employer programs

Adair, C., Weiss, J., & Elliott, J. (2016). Leveraging the employer-employee relationship to reduce greenhouse gas emissions at the residential level. In B. G. Southwell, E. M. B. Doran, L. S. Richman (Eds.), *Innovations in home energy use: a sourcebook for behavior change* (pp. 141-168). Research Triangle Park, NC: RTI Press.

- Consider *gamification* and incentive models used for health improvements by various employers.
- What level of competition and incentives are motivating for employees?

Contact information for collaboration or questions

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