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# Energy Behaviour in Healthcare

## *Stories From the Field*

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Energy Lite Online  
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# Today's Objective

Explore an example of how hospitals connect social behaviour & organizational learning with energy efficiency to minimize building scale complications and reduce energy waste



**Kady Cowan**

**PEOPLE**

Why Focus on ~~Behaviour~~ to Save Energy

**PEOPLE ARE NOT GOING AWAY**

# Atrium Health

Carolinas HealthCare System is

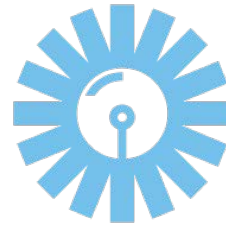


- Charlotte, North Carolina
- 40 hospitals
- 900+ care locations
- 62,000+ staff
- 7500 beds
- 17.5 M ft<sup>2</sup>
- 12.5 M patient encounters/year
- Utilities \$37M
- Sustainability born in 2012



[2018 Tools of Change landmark case study](#)

**Energy Connect  
will help link  
human actions to  
energy savings,  
natural resource  
conservation and  
patient experience**



ENERGY  
**CONNECT**

## We collected our stories to help learn about our energy culture

### Once upon a time....

...there was a pediatric building that was always cold during the winter months.

...I was sitting in the outer office waiting room of a hospital CEO.

...a powerful group of energy data wizards sat in a command tower at the hospital, sending pigeons out to carry new energy solutions to the hospital workers, but the people either ignored or didn't understand their missives.

# Energy Connect Savings from IPMVP Modelling 2018

Site	Electricity Savings	Gas Savings
Acute Hospital	-2.0%	-11.4%
Rural Hospital	2.8%	6.7%
Medical Office	15.1%	n/a
Medical Office	1.5%	6.6%
Emergency Care Facility	8.7%	24.5%
Data & Call Center	12.5%	n/a

# Launch of Award Winning Energy Connect Program

**“IGNORE THE PEOPLE AT YOUR PERIL”**

Dr. Reuven Sussman, Director, Behavior & Human Dimensions Program (ACEEE)

Target Audience

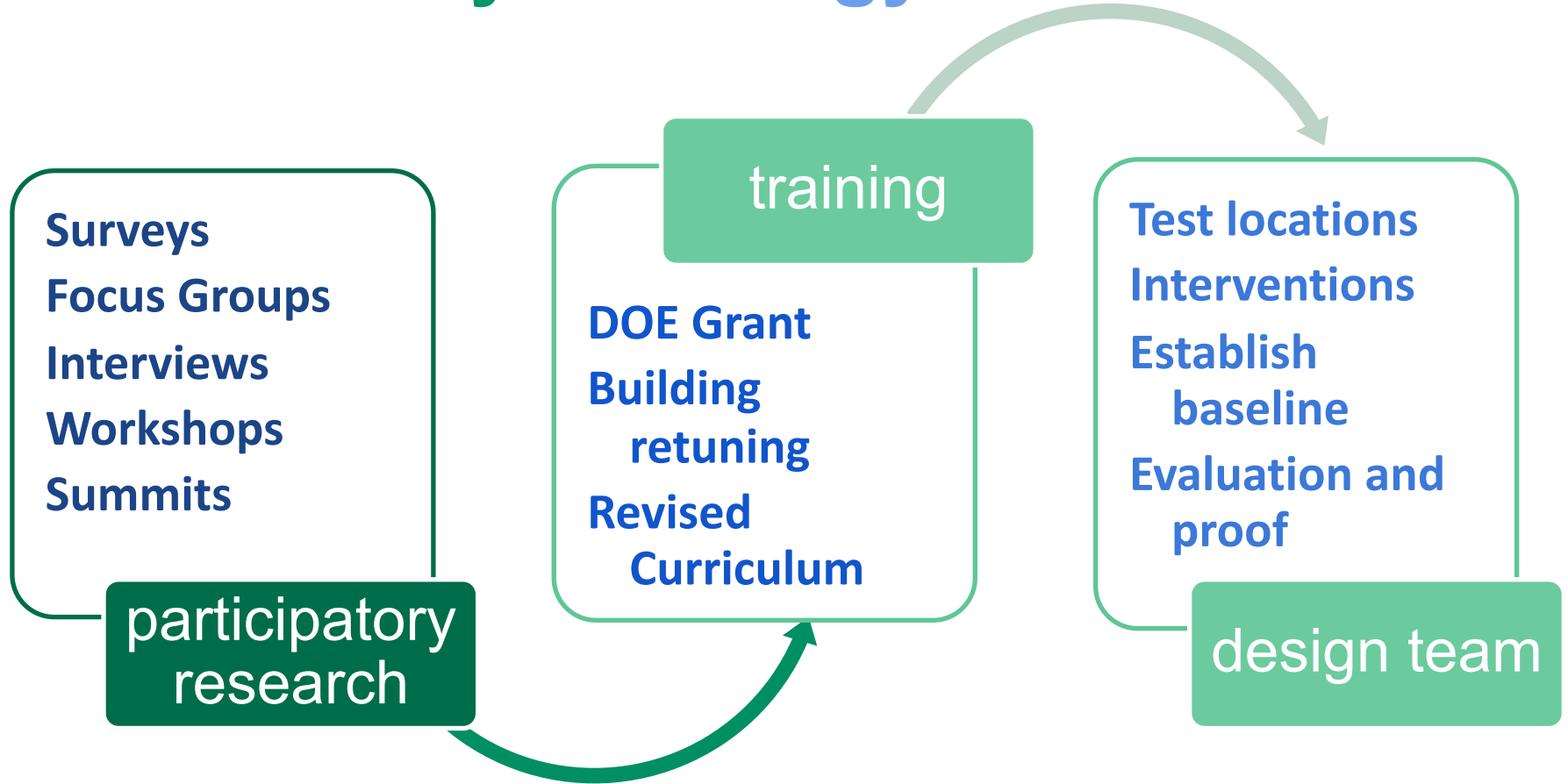
Facilities staff

Target Behaviour

Reduce overrides in  
the BAS



# Brief History of Energy Connect



# Actors in the Energy Ecosystem

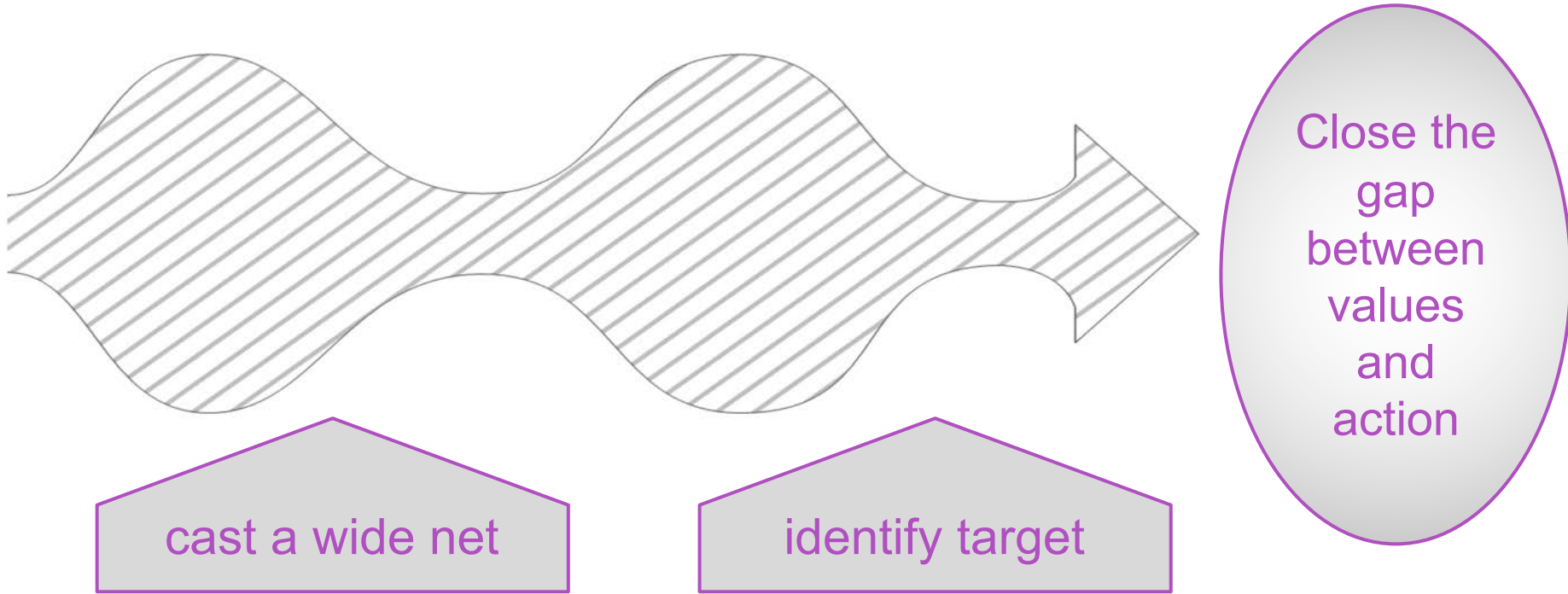


# 6 Interventions for Building Mechanics

1. In-person training (10 hours over 5 weeks)
2. Make data visible
3. Select and support a site based energy champion
4. Develop a process flow for hot/cold call response
5. Document adjustments in the BAS
6. Promote conversation between occupants and facilities with regard to energy savings

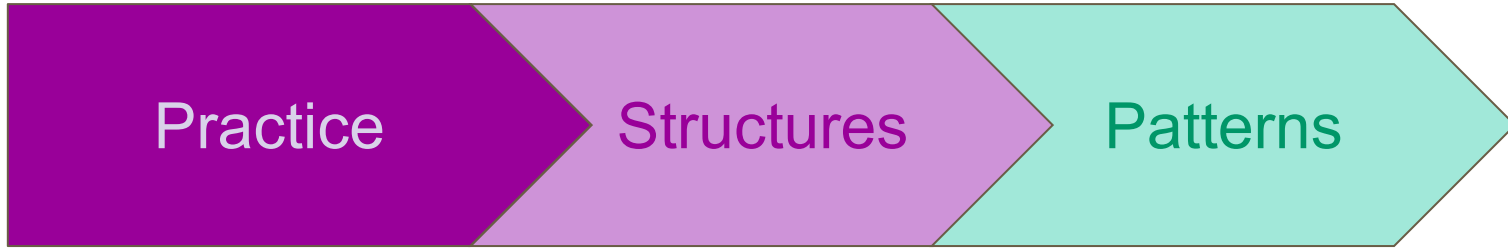


# Innovation and Experimentation = value new ways of knowing



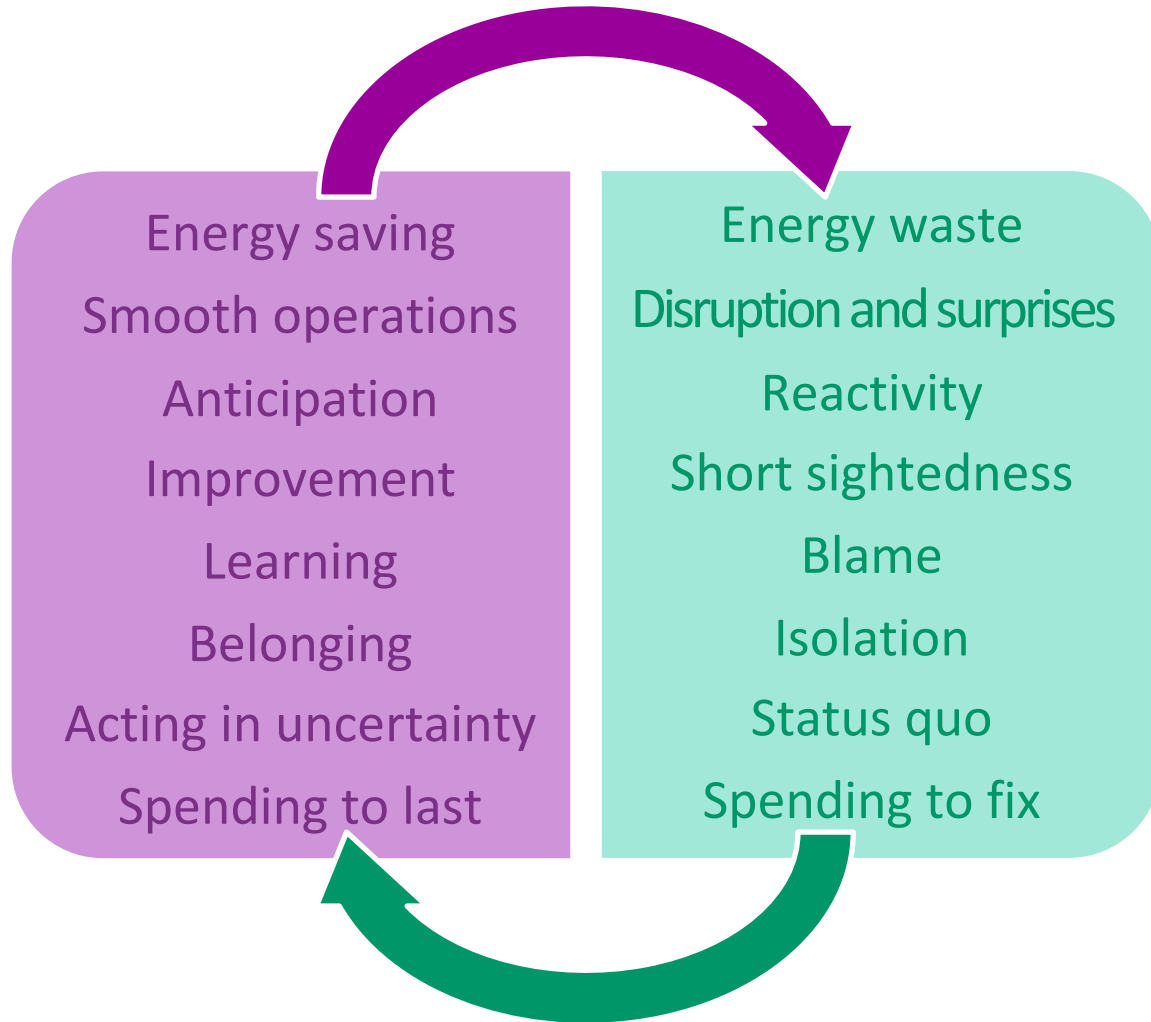
Move from imprecise phases of hunch to proof by observation

# Patterns Emerge from Observation of Circumstances



- Patterns help us to organize our attention
- Patterns help us see practices that hold structures in place
- Here we learn how we might intervene in the system

Some structures result in INTENDED outcomes



Some structures result in PERVERSE outcomes

# Some of what we discovered

- People have poor perceptions of their energy habits
- Willingness to fix problems is much stronger than willingness to get it right from the start
- The skills to run complex buildings are not valued highly enough
- High tolerance for short term solutions
- Very few people know they have permission to “save energy” and fear getting in trouble if they make a change
- All people see themselves as caring about the circumstances at work
- We do not take the chance to learn from experience and each other

# Some of the proposed remedies

- Creating jobs with 21<sup>st</sup> century problem solving skills (eg. hire for energy expertise)
- Solve for multiple outcomes simultaneously (eg. energy efficiency and indoor air quality)
- Including multiple perspectives in research and decision making (eg. building operators part of design phase, nurses part of evaluation)
- Senior leaders need to value energy efficiency publicly
- Give permission to all staff to solve energy efficiency challenges (eg. documenting BAS adjustments)
- Extend observation timeline so results have time to emerge
- Embrace new ways of knowing



# If we get it right, we embed energy savings more deeply into the fabric of the organization

- Customized, targeted, measurable behaviour interventions that yield predictable results
- Increase energy savings
- Retain energy savings over the long-term
- Expose new or untapped energy saving potential
- Turn energy from abstract to personal with stories
- Reduce building scale complications
- Count behaviour as an asset

**Be prepared for the future - Machine learning, automation, zero net buildings, big data, climate change, distributed energy resources, renewables**

# It's not easy, but you gotta start somewhere

1. People are part of the energy system - but we sometimes make poor decisions, or fail to act rationally.
2. The energy system begins and ends with the human need for services (heat, light, computing, well-being).
3. Design people into, not out of the system (automation has a time and a place).
4. Behaviour complements technology and traditional economics, does not replace it.
5. Behaviour change involves complexity and uncertainty. Embrace the fuzziness, while knowing it's still science based.
6. Ignore the people at your peril.



Warming up a cold conference room

## DISCUSSION TOPIC: Think about your workplace

Is there an energy related process or technical change not performing as you would have hoped over the long term?



**Thank you**

**FIND ME AGAIN**

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**TWITTER @kadysee**

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# Appendix 1

# Links to More about Energy Connect

- [2015 Human Behaviour and Facility Energy Management](#)
- [2016 ACEEE Buildings Summer Study](#) *Designing Energy Behavior*
- [2017 IEA technical report & IEA webinar](#)
- [2017 BECC Conference](#) *Helping the Behaviour Changers*
- [2018 ACEEE Building Summer Study](#) *It's Not My Job*
- [2018 BECC Conference](#) *Training Building Operators to be Energy Champions*
- [2018 WEEC Presentation and Paper](#)
- [2018 Tools of Change international landmark case study](#)
- [2018 AEE energy innovator of the year award](#)
- [2019 EVO \(Efficiency Valuation Organization\) M&V Magazine](#) *Perspective on M&V behavioral change programs in commercial and industrial facilities*

# Definitions

- **Behaviour Change** - Changes in human actions which were directly or indirectly influenced by a variety of interventions (e.g. legislation, incentives, social norms, feedback)
- **Energy Behaviour** – human actions that affect the way that fuels are used to achieve desired services (e.g. use of technology, BAS set points, turning energy equipment on and off)
- **Energy Behaviour Changer** – a person tasked with designing, implementing and evaluating interventions geared at changing energy behaviour
- **Programs** - refer to the various techniques, organizational rules and interventions which are designed to influence people to increase the occurrence of desired energy-saving actions
- **Interventions** - are only limited by our imagination; legislation, incentives, social norms, feedback, training, competition, awards, champions, dashboards.....

# Key behaviour change tactics for the energy sector

Strategy	Definition
<b>Commitment</b>	<i>influence participant by asking participants to pledge either in a written or verbal format to adopt an energy saving actions.</i>
<b>Feedback</b>	<i>influence participant behavior by providing participants with information about how much energy they use over time.</i>
<b>Follow-Through</b>	<i>influence participant behavior through subsequent interactions designed to remind the customer of the message delivered during the initial interaction.</i>



# Key behaviour change tactics for the energy sector

Strategy	Definition
<b>Framing</b> (includes “nudges” like setting default options)	<i>influence participant behavior by presenting information to them in a way that may more effectively persuade them to take the desired actions.</i>
<b>In-person interactions</b> (trusted messenger or social diffusion)	<i>influence participant behavior by sending a program representative or partner to speak with a participant face-to-face.</i>

# Key behaviour change tactics for the energy sector

Strategy	Definition
<b>Rewards or gifts</b>	<i>influence participant behavior by providing certain benefits in exchange for completion of desired actions.</i>
<b>Social norms</b>	<i>influence participant behavior by comparing them to members of their community.</i>