

CHANGING BEHAVIOR AND ENGAGING SCIENTISTS AT CU BOULDER USING COMMUNITY-BASED SOCIAL MARKETING* STRATEGIES

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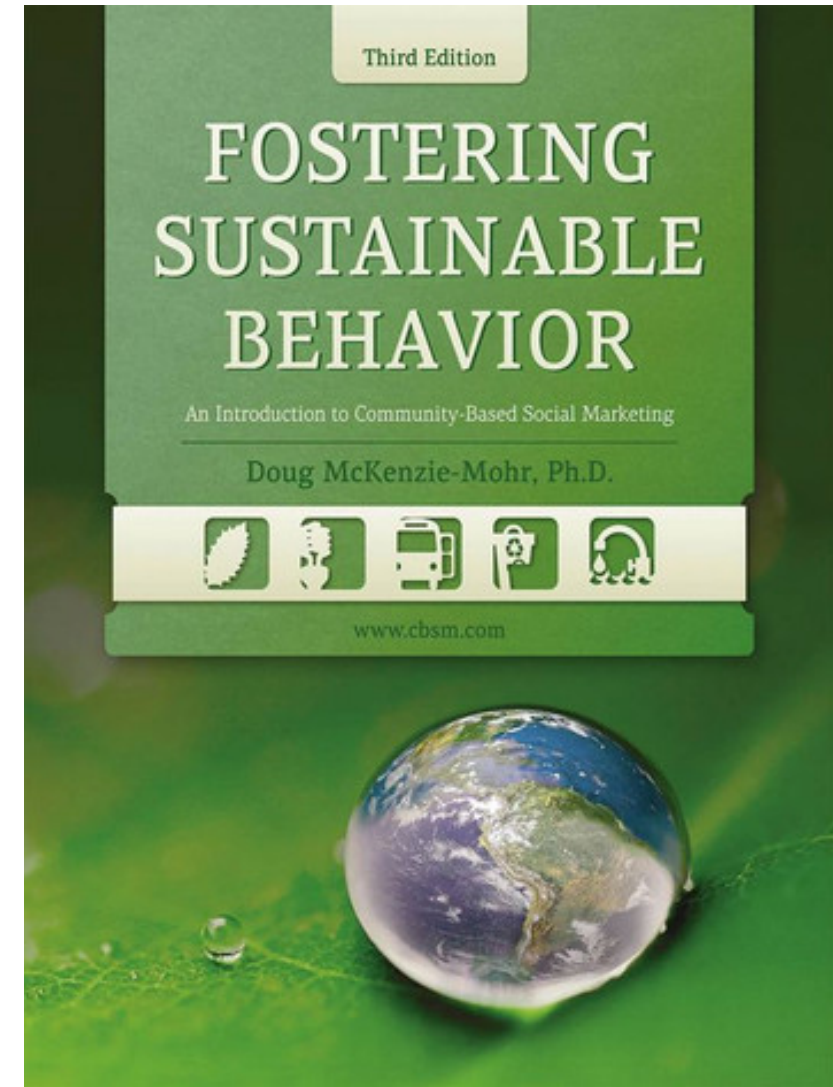
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* CBSM is a system of promoting behavior change developed by Dr. Doug McKenzie-Mohr

BACKGROUND



Dr. Doug McKenzie-Mohr



www.cbsm.com

WHAT IS CBSM?

- An approach to promoting behavior change based on research in social psychology. Can be effectively used for behaviors related to:
 - Sustainability
 - Health
 - Safety & Injury Prevention
- Identifies barriers to behavior change before applying strategies to promote lasting change

WHAT CBSM IS NOT

- It's not
 - a social media campaign
 - Information-Based Campaigns (Attitude-Behavior Approach)
 - Economic Self-Interest Approaches



- Studies indicate that these strategies are not enough to change behavior
- Virtually no link between attitudes/knowledge and behavior
- Why doesn't this work?

BARRIERS TO CHANGE AREN'T CONSIDERED

COMMUNITY BASED SOCIAL MARKETING

Select
Behaviors

1

Uncover
Barriers &
Benefits

2

Develop
Strategies



3

Pilot
Strategies

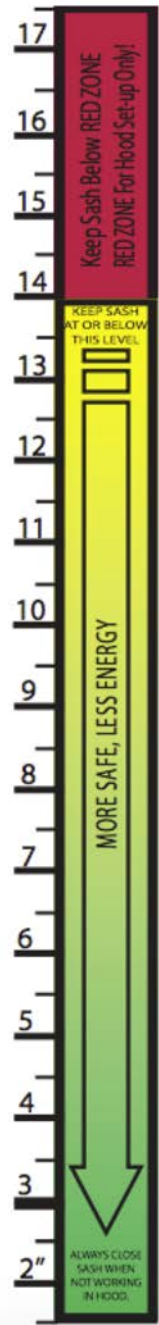
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Implement
Broadly &
Evaluate

5

STRATEGY: PROMPTS

- Sometimes people don't do sustainable behaviors not because they don't care or lack motivation, it is that they forget.
- General prompts rarely have impact – the suggested behavior must be specific!
- Must be delivered in close proximity of time and space with the behavior in order to be effective.
- Particularly useful for repetitive behaviors because more impact



STRATEGY: PROMPTS



CU Green Labs Refrigerator & Freezer Maintenance Program Checklist

Manual Defrost -20°C Freezer or Manual Defrost Refrigerator/Freezer

- ✓ **Door sealing tightly and free of frost? – Brush frost frequently! IMPORTANT!**
 - A good seal is so important for keeping warm air outside of your freezer for both the benefit of energy efficiency and unit performance.
 - Frost and ice build-up can damage gaskets leading to expensive repairs.
 - Keep gaskets free of frost and ice by brushing frost off your gasket frequently while it is easy to remove.
 - Close the door on a piece of paper. If the paper falls, the gasket is not sealing well.
- ✓ **Too much frost?**
 - Is there more than a 1/2 inch of frost in a number of places in the freezer? If so, it's time to defrost your freezer.
- ✓ **No objects blocking air flow? IMPORTANT!**
 - Remove items that have fallen behind or are pushed up against your unit blocking air flow underneath, on the sides, or above your unit. Be especially careful not to block air intake or exhaust grills.
 - It is important that the freezer has good air flow for freezer performance and energy efficiency.
- ✓ **Coils clean (if accessible)? If your unit has exposed coils on the back, top or underneath, then:**
 - Look for dust on coils.
 - Dirty coils increase energy consumption by preventing effective heat dissipation.

*ruler modified from those in use at UC Davis, developed by Allen Doyle

** Shut the Sash “hand” sticker modified from the University of Toronto

STRATEGY: COMMITMENT

- Individuals that agree to a small, innocuous request are more likely to agree to a much larger request later
- Why is this? Making a commitment changes the way we perceive ourselves. As humans, we want to behave consistently. Consistency is a highly valued character trait in society.
- Substantial time can pass between the first and second request to make a commitment, and the second request can be made by a different person.
- This means that the first request changes how we perceive ourselves in a lasting, durable way.

STRATEGY: COMMITMENT

OUR LAB has taken the

Green Labs Culture Pledge

When possible, WE WILL:

1. Design experiments to minimize energy, water, chemical, & material use
2. Write sustainability choices into grant proposals, research papers & presentations
3. Use green chemistry, green supplies, & equipment that is energy/water efficient
4. Share or efficiently use lab space, fume hoods & equipment to avoid the need for more
5. Include sustainability in classroom teaching, training new scientists & lab meetings/seminars

Together we can advance sustainability in the science community

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- Ask labs to make a written commitment (more effective than verbal)
- Make the commitment public & durable
 - Advertised on doors of participating labs
 - On Green Labs outreach posters
 - On Green Labs website
 - Building TV displays
- Commitments must be voluntary
- Easily combined with other behavior change techniques

STRATEGY: SOCIAL NORMING (Building community support)

- *Normalizing* sustainable behaviors in society
- Other people have an important role and influence on our own behavior
- Make the norm noticeable.
- Present norms at the time a targeted behavior should occur.
- Use norms to encourage positive behavior
- But be careful!
 - Don't publicize that an undesirable behavior is common!

STRATEGY: SOCIAL NORMING

Labs campus-wide are joining CU Green Labs!

Labs with Eco-Leaders as of January 2012

Ahn
Anseth
Barger
Batey
Blumenthal
Blumenthal
Boswell
Bowers
Bowman, C.
Bowman, W.
Breed
Bryant/Mahoney
Campeau
Caruthers
Cech
Collinge
Copley
DeDecker
DeSousa
Diggle
Dowell
Dukovic
Eaton
Ehringer
Falke
Feldheim
Flierer
Friedman
Garcea
George
Gin
Greenberg
Guralnick
Han
Jimenez, J.L.
Johnson
Jones
Kack
Knight
Koch
Krauter
Kuchta
Lee, Y.C.
Leinwand



Departments with Eco-Leaders

Civil, Environmental, &
Architectural Engineering (CEAE)
Chemical & Biological Engineering (ChBE)
Chemistry & Biochemistry (CHEM)
College of Architecture & Planning (CAP)
Cooperative Institute for Research in
Environmental Sciences (CIRES)
Department of Geological Sciences
Ecology & Evolutionary Biology (EBIO)
Institute for Behavioral Genetics (IBG)
Institute of Arctic & Alpine
Research (INSTAAR)
Integrative Physiology (IPHY)
Joint Institute for Laboratory
Astrophysics (JILA)
Mechanical Engineering (ME)
Molecular, Cellular, & Developmental
Biology (MCDB)
Museum of Natural History
Psychology (PSYCH)
Physics (PHYS)

YOUR LAB NAME AND DEPARTMENT HERE!

Does your lab have an Eco-Leader?

If not, get involved today! Sign up to be an Eco-Leader for your lab or department!
For more information, contact Kathy Ramirez below.

Let's work together...

to green campus labs and push for energy efficient, environmentally friendly products
from manufacturers.

Your decisions and dollars have impact!

CU Green Labs Contact:
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Labs Taking Action With ULT* FREEZERS!

*ULT=Ultra Low Temperature

Combined Electricity Savings
for all actions:

=750 kWh/day!
Same as ~30 houses!



At CU Boulder...

50% of ULT Freezers are at -70 °C!

Adams	Anseth	Batey	Blumenthal	Caruthers	Chen	Copley
DeSousa	Dowell	Ehringer	Ferguson	Fleshne	Flierer	Garcea
Gill	Han	Hernandez	Jones	Junge	Klymkowsky	Koch
Kocielek	Linden	Liu	Marks	Martin	McIntosh	McKenzie
Moore	Nemergut	Olwin	Pardi	Poyton	Randolph	Roy
Schmidt	Seals	Shen	Sievers	Smolen	Sousa	R. Spencer
Stein	Stitzel	Su	Taatjes	Tan	Tsai	van Blerkom
Winey	Wright Jr.	Wuttke	Xue	Yarus	Yin	Templeton

Labs Sharing ULT Freezer Space!

Ahn	Biochem Teaching Lab	Bourgeois	Detweiler	Dowell	Garcea
Goodrich	Hoenger	Kane	McIntosh	Medeiros	Moore
Pardi	Perkins	S. Spencer	Stock	Smith	Safran
Sawyer	Winey	Wuttke	Templeton	Anthropology	

Labs That Retired Old ULT Freezers Without Replacement!

Adams	Bourgeois	Falke	Han	Hoenger	Medeiros	Roy
Spencer	Winey	Tsai	Johnson	Ahn	Schmidt	Martin
Olwin						

Labs Purchasing Energy-Efficient Models!

Blumenthal	Falke	Fleshner	Gill	Liu	Han	McKenzie
Neu	Tripp	Safran	Smith	Kane	Seals	

Keeping Secondary Back-Up ULT's Unplugged Until Needed!

JSCBB MCDB Dept

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Friends don't let friends leave sashes open!



**Shut your sash &
panels to...**

**SAVE ENERGY
& BE SAFE!!!**

Join these JSCBB labs with good sash etiquette:

- Gill
- Pardi
- Yin
- David
- Hough
- Sousa
- Anseth
- Weimer
- Bryant
- Leinwand
- Randolph
- Knight/Dowell
- Wuttke
- Garcea
- Falke
- Parker

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STRATEGY: SOCIAL DIFFUSION

(Speeding adoption of positive behaviors)

- We are heavily influenced by our social networks: family, friends, coworkers, neighbors
- Get help from those that have already adopted sustainable behaviors to influence those around them (social diffusion)
- Works two ways:
 - More people are asked to change behavior
 - The one doing the asking is more likely to stick with the behavior because they are now asking their social networks to do it too
- Make sure the behavior is **Observable**
- Use in conjunction with other strategies such as commitment

STRATEGY: SOCIAL DIFFUSION

Team Lead Role at CU Boulder



NEW "ECO-GRAVITY" MODES NOW AVAILABLE ON ALL JSCBB AUTOCLAVES!

- Useful for sterilizing 'dry goods' and biohazardous waste
- 30 min, 45 min and 60 min sterilization cycle times available
- Dry cycle time is set to 5 minutes for each cycle which is sufficient for most applications
 - **Dry cycle uses 6 gallons of water per minute!**
- Look for these modes on the first page of all autoclaves



With questions or suggestions, contact CU Green Labs at greenlabs@colorado.edu or contact your JSCBB Team Lead Dave Simpson at David.M.Simpson@Colorado.EDU

STRATEGY: INCENTIVES

- Useful when an individual's motivation to engage in a particular behavior is low or when cost to do something sustainable is a significant barrier
- From Gardner & Stern's* reference on using incentives to improve engagement in sustainable actions:
 - Consider incentive size carefully
 - Pair the incentive & behavior, ideally present at same time
 - Incentive should be visible
 - Reward positive behavior
 - Be cautious about removing an incentive that is already in place

* Gardner, G.T. & Stern, P.C. (1996). "Environmental Problems and Human Behavior." Boston: Allyn and Bacon.

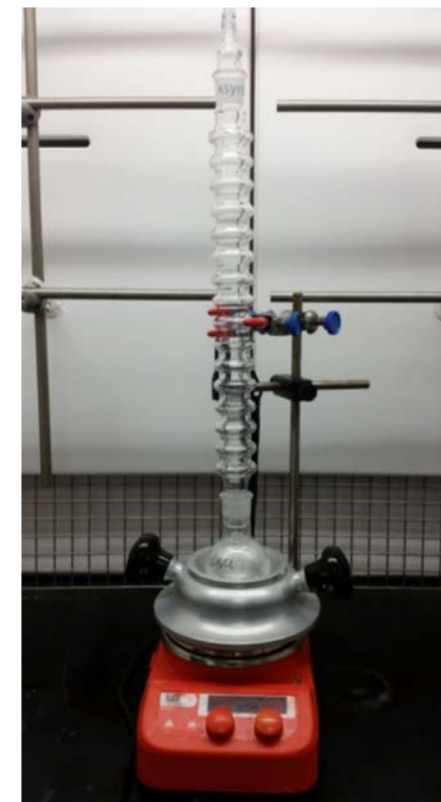
STRATEGY: INCENTIVES



Stickers on equipment purchased with
financial incentives from our Facilities
Management group



Waterless condensers



Free
equipment
timers

STRATEGY: INCENTIVES



Give Your Compressor a Break!
Increase the temperature of your ULT (Ultra Low Temperature) Freezer to -70°C

-70°C
Extend Freezer Life
 -80°C

=



2-4 kWh/day saved
same as a LCD TV

Save Energy While Extending Freezer Lifetime

- Increasing the temperature means the compressor does not have to work as hard.
- Since the compressor works less, there is reduced risk for compressor failure.
- 34 ULT freezers at CU-Boulder and 40 at UC-Davis are already at -70°C or warmer.

Join These CU-Boulder Labs That Are Already at -70°C

•Anseth	•Copley	•Martin	•Schmidt	•Taatzjes
•Blumenthal	•Ehringer/Marks	•Moore	•Shen	•Winey
•Chen/Junge	•Garcea	•Poyton	•Smolen	•Xue
•Collins/Stitzel	•Han	•Seals	•Stein	

For info on samples that labs are storing at -70°C or warmer go to ecenter.colorado.edu/greenlabs

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-70°C
(up to 4 kWh/day saved!)

Switching your ULT freezer from -80°C to -70°C saves more electricity than a full-size household freezer uses!

Vivid communication strategy;
easy to remember

“Increasing the temperature means the compressor does not have to work as hard. Since the compressor works less, there is reduce risk for compressor failure.”

Social Norming!

STRATEGY: HIGH QUALITY COMMUNICATION & EFFECTIVE PERSUASION

- VIVID
 - CONCRETE
 - PERSONAL
-
- Know your audience
 - Reference credible sources and work with credible groups
 - Make message easy to remember
 - Provide personal or community goals

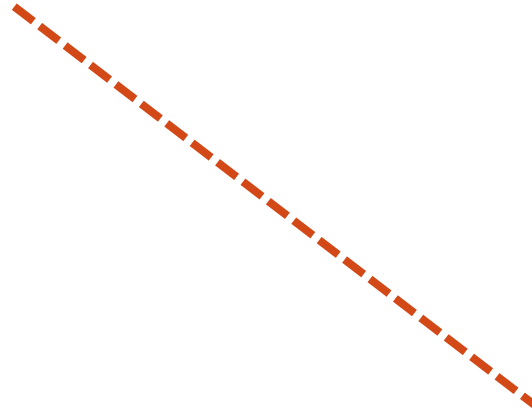
EFFECTIVE COMMUNICATION



CBSM at Harvard University



COMBINING STRATEGIES



**MAKE IT CONVENIENT TO ADOPT
SUSTAINABLE BEHAVIORS**

IN SUMMARY

- I am not an expert on applying CBSM to sustainability
- CBSM is a great framework to use to promote more sustainable behaviors at your campus or institution
- Also gives interesting insight into human behavior/psychology
- Lots more information available online and through the free 3rd edition of Fostering Sustainable Behavior by Doug McKenzie-Mohr

NEXT STEPS

- Enhancement of Eco Leader Program



ACKNOWLEDGMENTS



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Facilities Management
UNIVERSITY OF COLORADO **BOULDER**

Kathy Ramirez-Aguilar, PhD - CU Green Labs Program Manager

QUESTIONS?



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