

Lessons From Boston Children's Hospital Green Labs and Employee-Lead Group Initiatives

A2: Sustainable Science

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Session Goals & Takeaways

- **Identify** practical sustainability initiatives that integrate energy efficiency, waste reduction, and behavioral change in research and healthcare environments.
- **Understand** how to engage diverse stakeholders—from researchers to facilities teams—to create alignment and ownership in sustainability initiatives. It's about Value!
- **Apply** data-driven methods to measure impact and communicate results that resonate with leadership, funding agencies, and peers.
- **Recognize** strategies for overcoming institutional barriers by linking sustainability to safety, compliance, and cost savings.
- **Adapt** Boston Children's Hospital's Green Labs and E.A.R.T.H. ELG models to build or strengthen similar programs at your own institution.





BCH's Vision for Sustainability

- Carbon neutral by 2030
- Net-zero emissions by 2050
- Alignment across Research, Clinical, Facilities, Engineering, and EH&S

The Why: Hospitals as Energy Giants



Labs use 3–10x
more energy than
offices



Healthcare = ~8.5%
of U.S. emissions



Sustainability =
operational
excellence

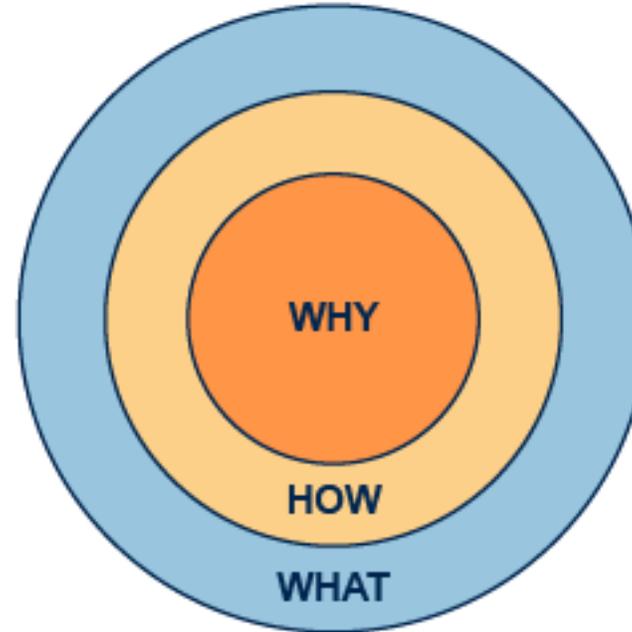


Start with Why

- Why: This is what I tell the researchers

“We work to heal children today, but if we can make the planet they inherit tomorrow cleaner, safer, and more sustainable, then we’re healing the future too.”

What's our Why



- WHY**
Your purpose, why do you do what you do
- HOW**
You do what you do
- WHAT**
You do and your results



Why: BCH Green Labs Program

- Why have it?
 - Reduce energy, waste, and emissions across six buildings, ~200 labs
- Who gave permission?
 - Funny story about that one
- What Happened?
 - Built from one small win to Institutional Recognition and the creation of the Department of Environmental Sustainability





Snapshot: BCH Green Labs

One Freezer, one
idea



- ~ 2019, 2020: The Few Who Cared – Tall Tales
- Winter of 2021 into 2022 “Hey Chuck...quick question...”
- 2022: 8 labs in Freezer Challenge, Top Clinical Organization
 - 2023: 20 labs, Winning Streak Award
 - March 2023 First Green Labs Event
 - 2024: 37 labs, Top Clinical Organization
- 2024: Inaugural I2SL UAG International Shut The Sash Champions
 - 2024: Started a pilot on Lab Plastics Recycling
- 2025: Hungry for Sustainability! The Green Dream Team is here!



Where it all began...again (2023)

- Green Labs– Grass Roots, Volunteers – NO FTEs
- How to find Members – Who Cares
- How to engage – Boots on the Ground
- Monthly Lab Rep Town Halls
- BCH Green Labs’ Website
- Monthly Emails
- Who’s your champion?
- Aces in Their Places
- Simon Sinek and The Golden Circle
 - It’s not what we do, it’s why
 - People want to be involved in the good! Its why they are in medicine, working at a hospital, and Change Makers are what they strive to be.



The Spark: Winning the International Freezer Challenge

- Cool things we learned
- First Place? First try? With 8 Labs? That's nuts.
- ResOps – PMs, Reminders, Kits built
- NE Patriots Former Coach Bill Belichick “Do Your Job”
- Top Clinical or Winning Streak 2022 – 2025
- 108+ metric tons CO2 avoided through freezer optimization

Beyond Freezer Competitions

- ULT energy audits
 - Utilizing Elemental Machines Pilot from 1st FC Win
 - kept our eye on failing units
- SWOOP – the power of stickers
- Free (to them) Outlet Timers
- Permanent energy awareness and cultural change

68% decrease in Freezer Failures



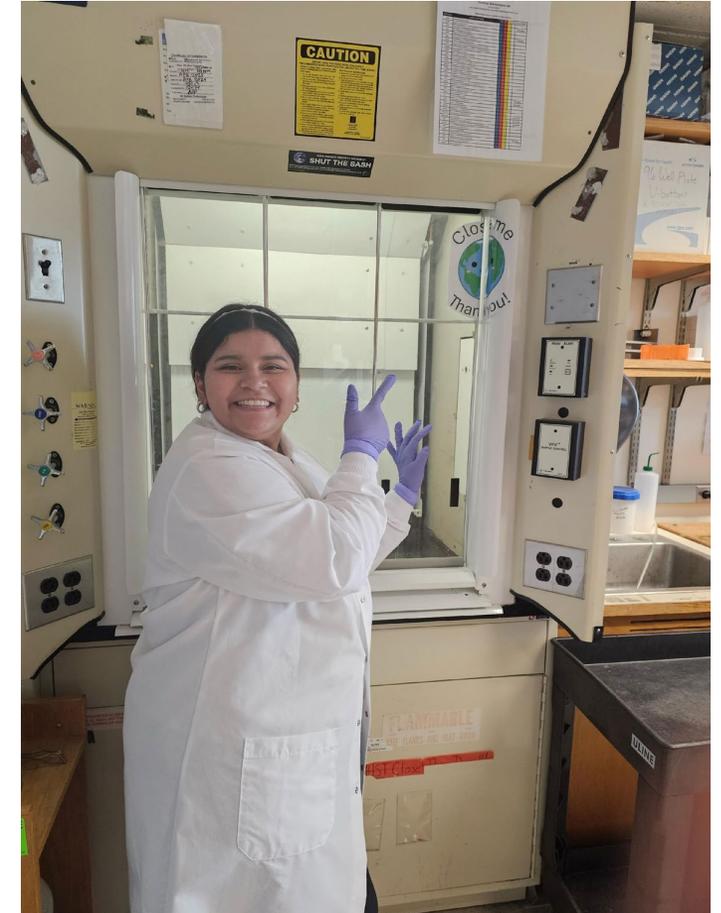
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Shut the Sash: Safety Meets Sustainability

Let's revisit Value:

- Labs see a competition.
- ResOps and RLSO see proper use/procedures.
- Engineers see utilization and infrastructure relief
- EH&S see SAFETY!!
- The winning lab saw an Ice Cream Party



Plastics Recycling Pilot: Polycarbin Partnership

Pilot two floors, one building → enterprise-wide expansion (37 floors, four buildings)

- Supported by \$10K CST grant
- ~16 tons of plastics diverted by November 2026
- Supported by 9 Green Labs core members and 40+ Green Champions across departments
- Impacting 1,500+ research staff enterprise-wide



Circular Economy in Action

Ice Pack Second Life Program



First Pickup:

- yielded ~986
- around 1,125lbs
- weight of a grizzly bear!
- They don't have to purchase
- We cut waste



Data That Drives Participation

Since the pilot launch:

- We have recycled 4,323 lbs!
- 21,981lbs of CO₂E reduced from recycled plastic

Using comparable “wow” items can really help sell!

Our Ice Pack Recycling program:

- It weighed the same as a small car engine
- A momma Polar Bear

Plastics:

- Total CO₂E cut equals 10 Acres of US Forest protected over a year

Plastic Impact

21,980

lb CO₂E reduced



797,034

gal water conserved



6,673

lb fossil fuels reduced



Equivalencies

Total CO₂E cut equal to...



1,078 days

of powering a -80°C freezer



Equivalencies

Total CO₂E cut equal to...



24,927 mi

driven by an average gas-powered vehicle



Building The Culture

- Monthly FRED Talks (Freezer Energy Reduction Discussions)
- Storytelling & recognition
- Empowering champions, not enforcers

Education and Communication

- Microsoft Sway Green Labs Gazette
- Shut the Sash & FC leaderboards & onboarding integration - videos
- Celebrate wins through visibility

Highlight the issue at hand

Educate

Demonstrate

Guide

Enable



What is a Hedge?

A sturdy wall of growth.

An investment made with the intention of reducing risk of adverse movements in an investment.

Formed by closely growing shrubs...

Green H.E.D.G.E. Method and The Golden Circle

Why – The Purpose

We believe that the most lasting change comes from empowering people through clarity, confidence, and guided action. We believe people want to do better — they just need the right support to get there.

How – The Process

Highlight the issue – Bring visibility to the problem or opportunity.

Educate – Share context, knowledge, and why it matters.

Demonstrate – Show exactly what good looks like.

Guide – Offer support as learners try it themselves.

Enable – Provide the tools, feedback, and space for autonomy and mastery.

What – The Outcome

- Leadership Development
- Sustainability Education
- Clinical Onboarding
- Any initiative that depends on human behavior change

HEDGE is a flexible Training Solution!

Equity & Inclusion in Action

- Engaging custodial staff with researchers – they help with recycling, we take \$\$ off their trash bill
- Sustainability is accessible to all roles
- Climate action as shared responsibility

Overcoming Institutional Barriers

- Limited budgets & legacy systems
- Education fatigue & competing priorities
- Align sustainability with safety, compliance, and cost savings

Driving Behavior Change





Driving Change: What Worked for Us

- Boots on the Ground
- The Green H.E.D.G.E. Approach
- We are stronger together... Ask yourself, “What is the value of what we’re doing?” And to whom?
 - Safety first: Partnered with EH&S
 - Engineering buy-in
 - Research Operations and Lab Support
- Competition + rewards = engagement
- Repeatable small actions lead to healthy habits, which leads to “Auto-Pilot” (Culture Change is passing it on)
- Clear signage, emails, training, **education**, community

Building a Culture of Sustainability

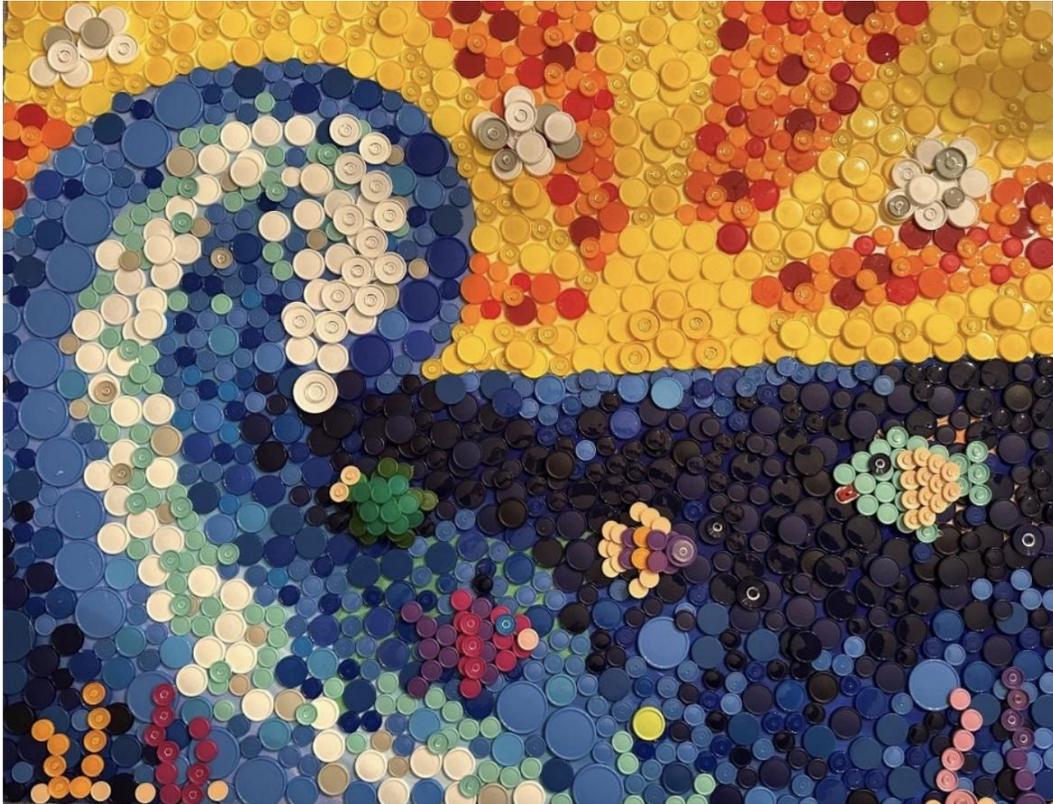
- Behavior → Habit → Culture
- Repetition and reminders work
- Peer influence is powerful
- Labs self-policing sash height!
- Find Your Green Champion!
- FIND YOUR **YES PEOPLE!**



People are inspired and driven not by *what* you do, but by *why* you do it.



Clinical Jumps in!



Nurses collect vile caps, saving them from the trash and turning them into Art!



Environmental Sustainability ELG

Boston Children's employee-driven sustainability group. We unite clinical, research, and operations staff to embed sustainable practices into everything we do!

Community, Work, Home

First Year with an ELG – October 2024 - 2025

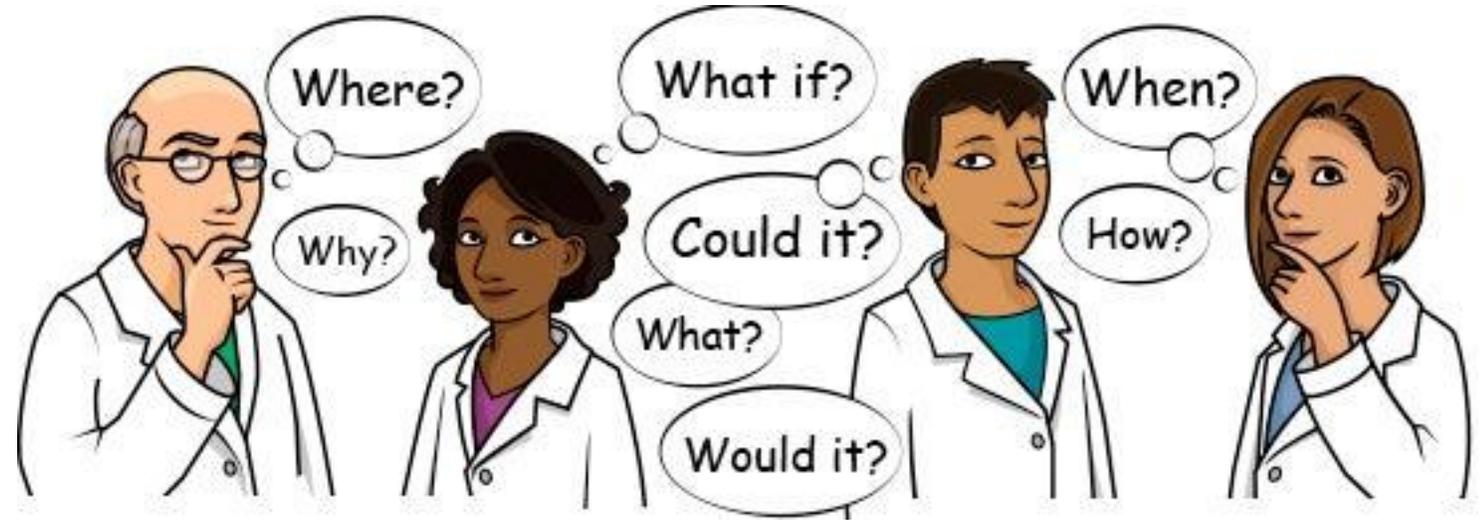
- Applied Sustainability Conference with Vendors
- Mass. State Climate Chief Melissa Hoffer event
- Facilities opens tours for employees to show sustainable improvements
- Sustainability Fair
 - Vendors (work, home, community)
 - Food and Fun

Awards – and we're just getting started



Change can start by asking questions!

- What can we do?
- What should we do?
- Who should we ask?
- Who's in charge here!?



Who to ask?

- Facilities
- Lab Support
- Your Sustainability Group
- EH&S
- Other institutions!



The BCH Model of Replicability

- Pilot → Scale →
Normalize → Celebrate
- Data + storytelling =
institutional change
- Create models others can
replicate





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