

FY16 SUSTAINABILITY REPORT

Harvard Medical School



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UNIVERSITY

Sustainability



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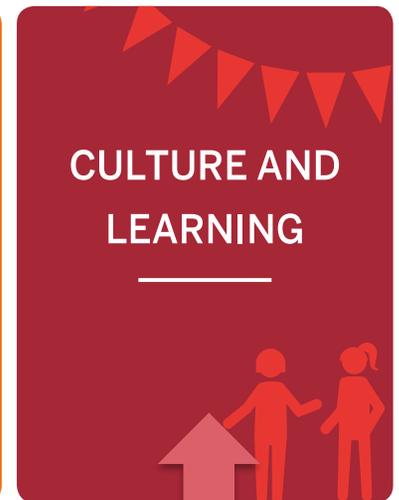
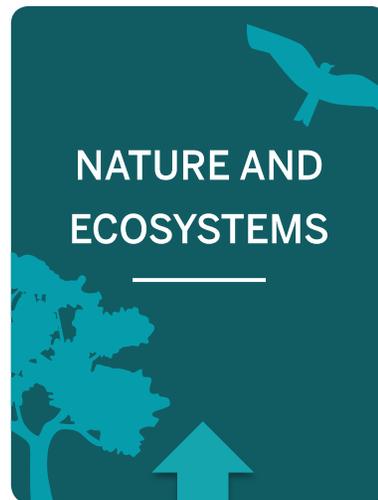
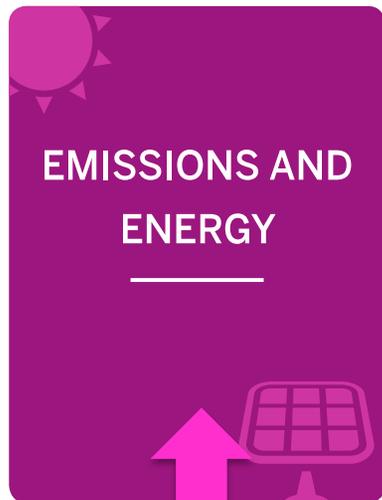




HARVARD UNIVERSITY SUSTAINABILITY PLAN

- Owner's Project Requirements
- Campus-wide water audits
- Waste bin standards development
- Green Lab Competition
- Freecycle events for labs and office
- Chemical Amnesty Day

- Bike Fair and Safety Summit
- Flame-retardant-free furniture
- Healthy and Sustainable Food Standards
- Take the Stairs Campaign



- HMS Strategic Energy Plan '16-'21
- HU Lab Ventilation Study
- PI Coresight
- BAS QC Program
- Commissioning
- Training

- Countway Community Garden
- Bi-Annual Arnold Arboretum Tour

- Earth Month Sustainability Fair
- EcoMosquito Newsletter
- Green Lab efforts: Researcher communication and outreach

LONGWOOD CAMPUS SUSTAINABILITY EVENTS



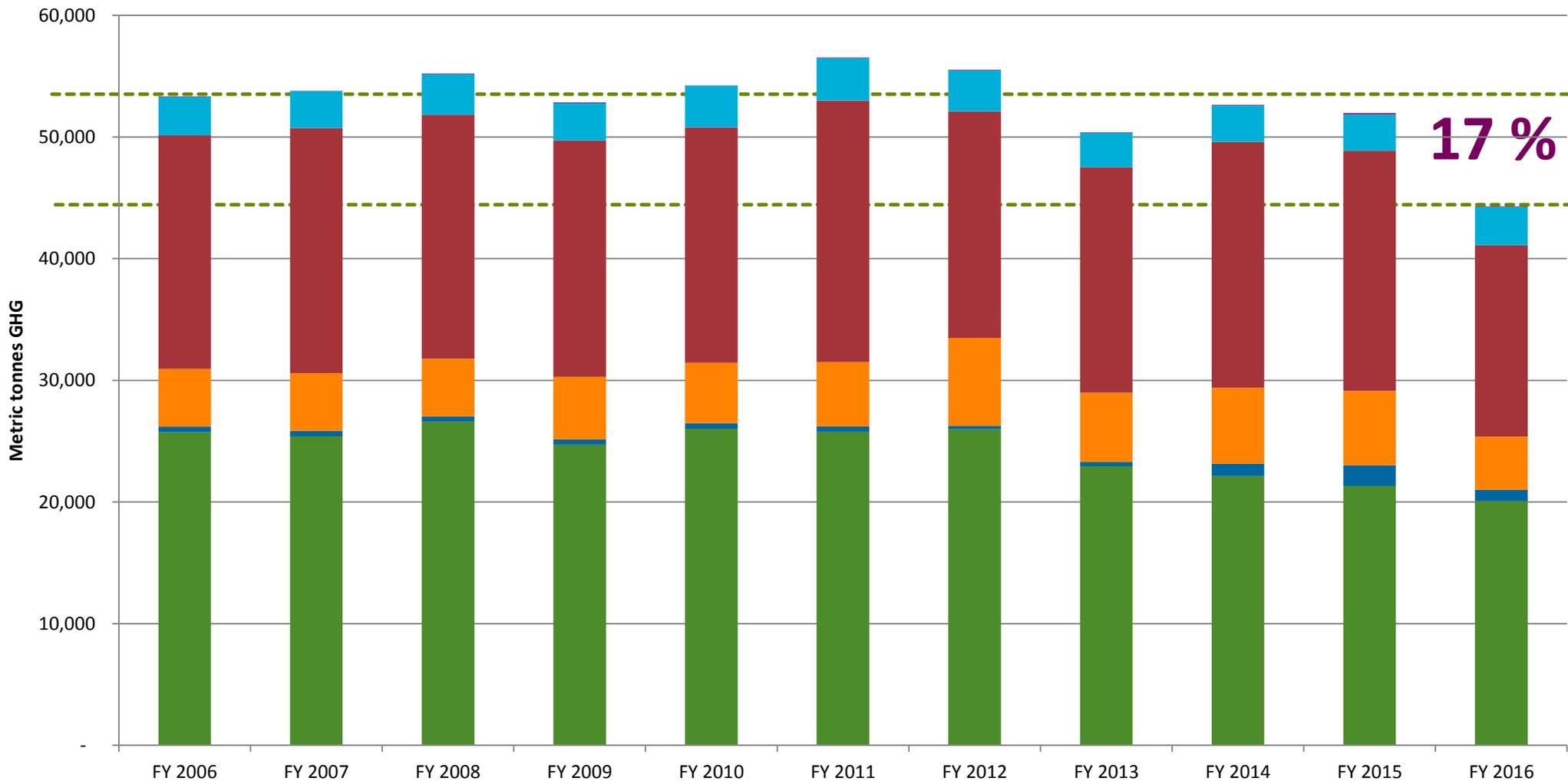
Description of Event	Plan Focus Area	Date	# of attendees
EcoMosquito Newsletter	Culture & Learning	Monthly Distribution	+250 person email list, Posted in +40 locations throughout campus
Harvard Longwood Bicyclists Newsletter	Culture & Learning	Monthly Distribution	1,200 person email list
Summer Garden Gathering	Nature & Eco., Culture & Learning	June 2016	35 Community Members
Commencement 2016 – Waste Diversion	Campus Operations	May 2016	25 Zero Waste Volunteers
Arnold Arboretum Student Trips	Nature & Ecosystems	Oct. 2015, May 2016	30 Chan School Students
Lab & Office Supply Freecycles, HMS and Harvard Chan School	Campus Operations	July, 2015, October 2015, May 2016	+200 community members at each
Chemical Amnesty & Swap	Campus Operations	May 2016	~50 labs participated
Take the Stairs	Health & Wellbeing	April 2016	+570 Community members, +177,000 flights of stairs
Earth Day Sustainability Fairs	Culture & Learning	April 2016	+250 Community members
Longwood Bicyclist Events: Bike Breakfast, Maintenance Classes, Safety Summit	Health & Wellbeing	Sept. 2015, April 2016	+300 Community members
Waste Reduction Ambassadors	Culture & Learning, Campus Operations	July & September 2015, March 2016	10 volunteers, reaches +150 community members each time
Green Labs Competition	Emissions & Energy, Campus Operations	October 2015	11 labs across Longwood
Dental School Special-Tea	Culture & Learning	September 2015	30 attendees
Annual Campus Bike Fair	Campus Operations	September 2015	+150 community members
Countway Garden Harvest Festival	Nature & Ecosystems	September 2015	30 Garden members
Countway Garden Social	Culture & Learning	August 2015	10
Energy Lighting Fairs	Emissions & Energy	December 2015, April 2016	68 and 51 Ratepayers respectively
Sustainability Signage on M2	Culture & Learning	Ongoing since July, 2015	Visible to 500 researchers/day
Sustainability Trivia	Culture & Learning	June & Oct. 2015, January 2016	~25 Staff

EMISSIONS AND ENERGY

HMS GHG EMISSIONS REDUCTION PROGRESS

HMS GHG emissions by category

Electricity Fugitive Emissions Stationary Combustion Steam Chilled Water Mobile Combustion



EMISSIONS AND ENERGY

AS OF FY16, HMS IS REPORTING A **17 PERCENT REDUCTION** FROM THE FY06 BASELINE YEAR.



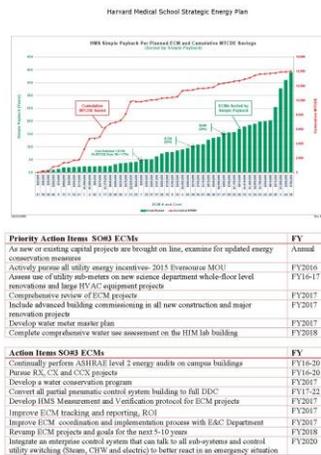
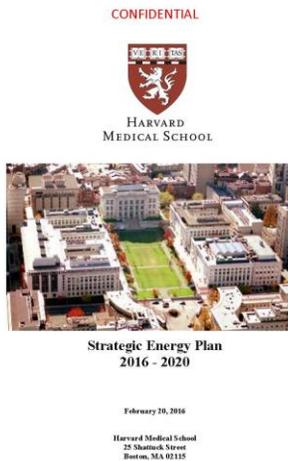
HMS's Longwood Base saw a 21 percent emissions reduction from 2006

Campus	GHG	Energy Use
<p>Campus Gross Square Footage</p> <p>FY06: 2.91 Million ft² FY16: 3.05 Million ft²</p> <p>Δ in ft² since FY06: +140,000</p>	<p>Total Emissions</p> <p>FY06: 53,013 MTCDE FY16: 44,308 MTCDE</p> <p>17% reduction total 21% reduction in 2006 Longwood Base buildings</p>	<p>Total energy use, including growth</p> <p>FY06: 716,145,888 kBtu FY16: 609,011,763 kBtu</p> <p>Approx. 15% reduction in kBtu</p>
<p>Water </p> <p>FY06: 16,854 CCF FY16: 15,738 CCF</p> <p>Reduction of ~1,116 CCF 6.6 % reduction in CCF</p>	<p>Waste</p> <p>FY06: 1,075 tons FY16: *Not Available*</p>	<p>New Programs and Tools</p> <p>HMS Facilities Design Standard HMS Energy Strategic Plan PI Coresight (with app) Energy Accounting System</p>

EMISSIONS AND ENERGY

ENERGY CONSERVATION MEASURES AND STRATEGIC ENERGY PROJECTS

HMS STRATEGIC ENERGY 5-YEAR PLAN '16-'21



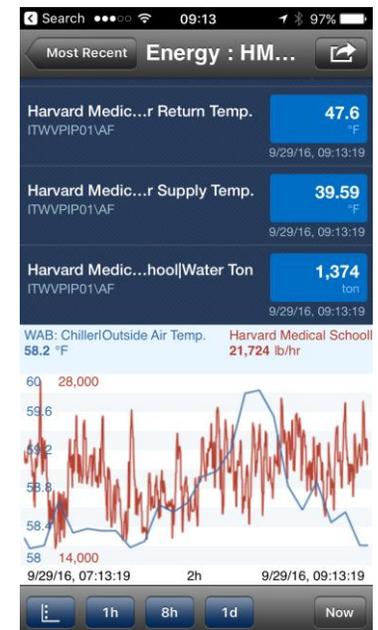
February 20, 2016

17

HU LAB VENTILATION STUDY



PI CORESIGHT



EMISSIONS AND ENERGY



HMS ECMS AND STRATEGIC ENERGY PROJECTS

1. BUILDING AUTOMATION SYSTEM - QUALITY CONTROL PROGRAM
2. COMMISSIONING
 1. Continuous CX BAS
 2. Commission/re-commission custom code to ensure HU temperature standards compliance
 3. BAS Fault detection program – over 700 items identified
 4. BMS Master spreadsheet – baseline of BAS Readings
3. TRAINING
 1. Hot-Cold Protocol Operator training
4. Air Handler Coil Cleaning for improved efficiency



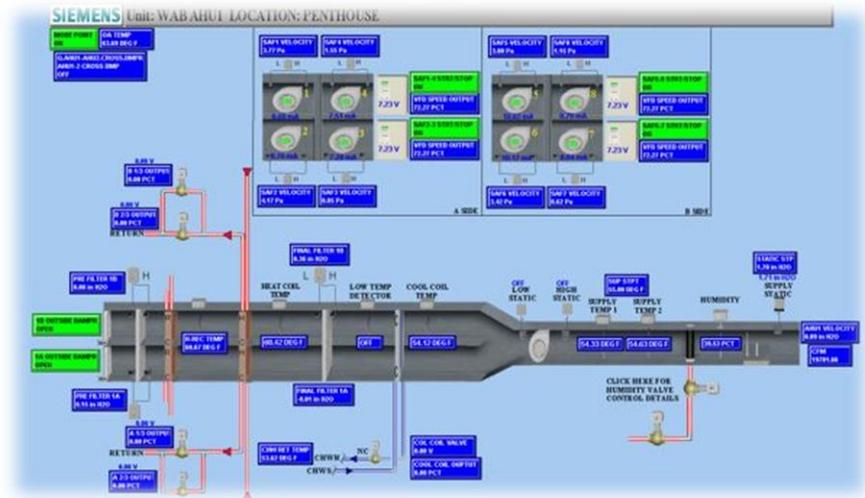
EMISSIONS AND ENERGY



HMS ECMS AND STRATEGIC ENERGY PROJECTS

VENTILATION: AIR-CHANGE RATES/HOUR AIR-CHANGE REDUCTIONS

- Vivarium Holding-Room spaces
- NRB
 - Supply Air Temperature Reset
 - Rebalance of non-lab spaces to current ASHRAE/IECC ventilation standards
- TMEC exhaust fan rebalance and consolidation



CAPITAL PROJECTS

AIR-HANDLER UPGRADES WITH FAN-ARRAY TECHNOLOGY

- Redundancies
- Decreased maintenance costs
- Increased ability for variable control



EMISSIONS AND ENERGY

HMS ECMS AND STRATEGIC ENERGY PROJECTS

LED LIGHTING UPGRADES

- Warren Alpert Building Garage
- Vanderbilt Hall Exterior
- NRB - HCCM 4' LED Tubes
- Campus-wide CFL→LED Lunera 4-pin
 - 2,000 lamps across HMS



EMISSIONS AND ENERGY

HMS ECMS AND STRATEGIC ENERGY PROJECTS

FACILITIES CONSTRUCTION DESIGN STANDARDS DEVELOPED

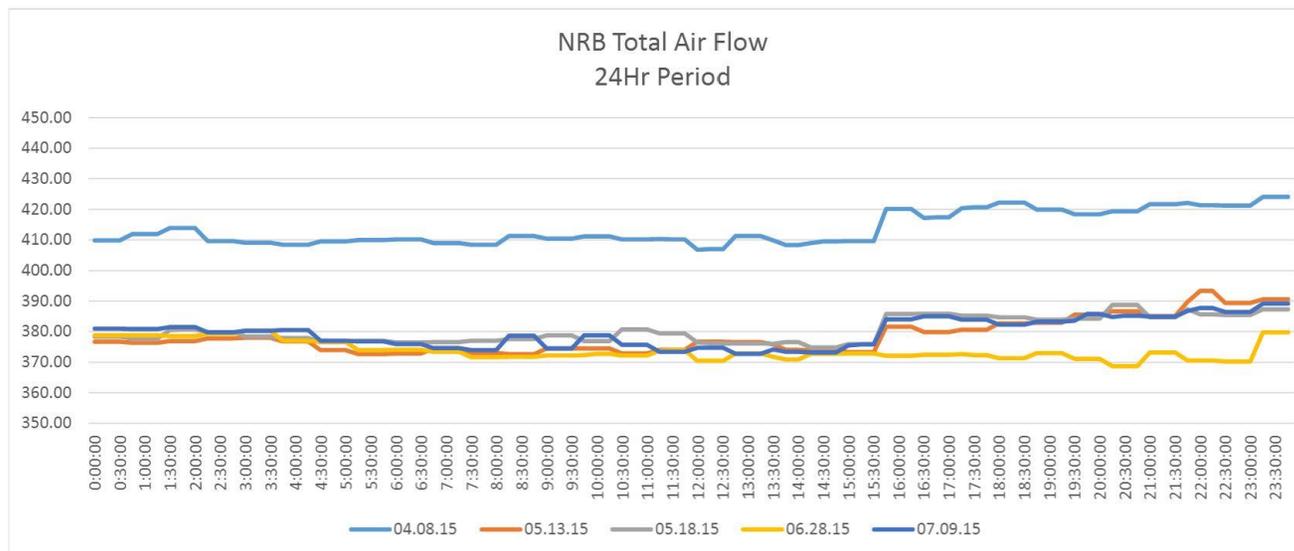
- Maintains internal consistency at HMS for construction and renovation projects

VENTILATION REDUCTION PROJECTS

- Discharge air temp (NRB)
- Revise ventilation rates to new Energy Code requirements

NRB - AIRFLOW ANALYSIS

07.20.15



EMISSIONS AND ENERGY

HMS ECMS AND STRATEGIC ENERGY PROJECTS

AUTOMATED AND CONTINUOUS COMMISSIONING OF BUILDING AUTOMATION SYSTEM (BAS)

- Using Fault Detection and Diagnosis

ASHRAE LEVEL 2 ENERGY AUDITS COMPLETED: C BUILDING, WAB

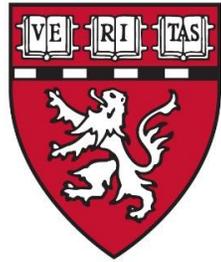
- HMS performs at least 2 ASHRAE Level-2 audits per year.
- Lab buildings are audited at least every 5-years

FAN COIL UNIT (FCU) REPLACEMENT

- Units equipped with energy saving Electronically Commutated Motors (ECM) motors



EMISSIONS AND ENERGY



HARVARD MEDICAL SCHOOL

Owner's Project Requirements (OPR)

OPR is a written document completed by the Owner or Owner's Representative.

This document will be used as the outline for the more detailed and technical Basis of Design (BOD) document.

Both the OPR and BOD inform, direct, and guide the design and construction process.

EMISSIONS AND ENERGY

ULT FREEZER PM PROGRAM

- ✓ HMS Facilities continued a preventative maintenance program on Harvard Owned Ultra Low Temperature freezers, which includes “-80” and “-140” degree freezers.

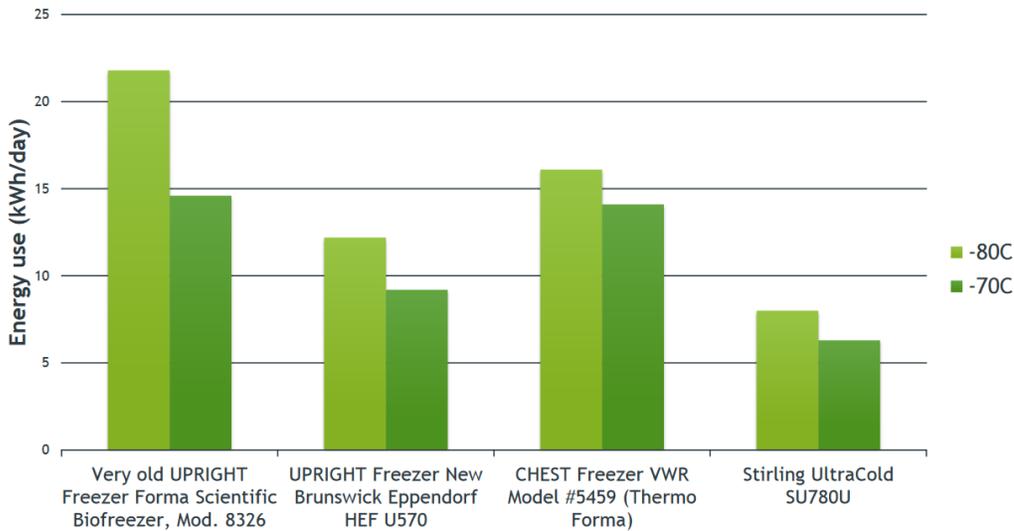
207 freezers were serviced, covering 331 issues, including connecting to Central Alarm, repairing gaskets/seals, and defrosting.

- ✓ Energy savings are associated with keeping freezer coils and filters free of dust, allowing for proper heat exchange.
- ✓ The PM program saves energy while providing a more secure environment for research samples—a win-win situation for research labs and facilities teams alike.

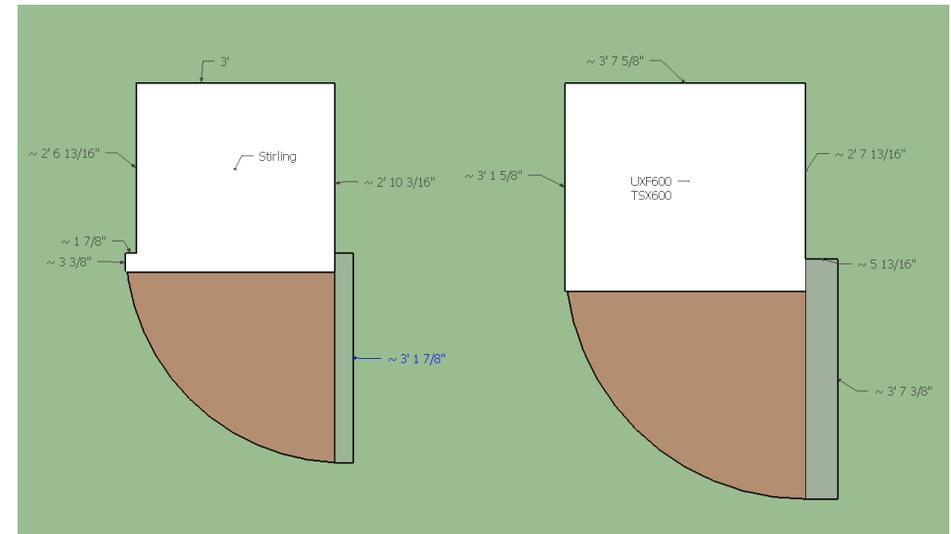


EMISSIONS AND ENERGY

ULT FREEZER ENERGY BATTLES



Sterling Ultracold and Thermo TSX Footprint Analysis



Eversource Rebate for both Sterling and TSX



OFS efforts to address researcher concerns with Sterling QA/QC



Next Steps:

- Move away from “-80” to “ULT”
- Advocate for temp. increase to -70 where appropriate

EMISSIONS AND ENERGY

LAB EQUIPMENT MONITORING

- ✓ Harvard iLab Start Up - Tetrascience
- ✓ HMS Laboratories in NRB and SJM actively monitoring over 30 piece of equipment – at no cost!

FREEZER, MEET CLOUD.

Get alerts, log data, and monitor your equipment remotely with the wi-fi enabled device from Harvard Innovation Lab start-up **TetraScience**.

Interested?
Email: GREENLABS@HARVARD.EDU



TETRASCIENCE

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FREEZER/INCUBATOR MONITORING FOR LABS

TETRASCIENCE IS EXCITED TO PARTNER WITH THE HARVARD OFFICE FOR SUSTAINABILITY TO PROVIDE HARVARD RESEARCH LABS WITH FREEZER AND INCUBATOR MONITORING PROBES AND DEVICES



CO2 Incubators



Ultra-Low Freezers



Temperature Sensors



- ✓ ALERTS VIA TEXT AND EMAIL
- ✓ WI-FI ENABLED SUPPORT
- ✓ WORKS WITH A WIDE RANGE OF TEMPERATURES

Contact energy@fas.harvard.edu to learn more!

- Enable your -80C or -20C freezer and/or your 37C incubators. Other temperature ranges supported.
- Monitor your sensors from anywhere, anytime through our Wi-Fi enabled solution
- stay in control by receiving texts and email as a per your preference

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TRUSTED BY RESEARCHERS AT HARVARD, MGH, VERTEX, ETC.



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CAMPUS OPERATIONS



WASTE ASSESSMENT AND BIN-STANDARD DEVELOPMENT

-  Completed a waste assessment and review of current practices and procedures around the waste stream
-  Identified priority locations for improvement and conducted onsite assessments
-  Approved updated informational signage for waste, recycling, and compost

		Waste Bin Counts					
		High Profile Spaces	Low Profile Spaces				
Building Name	Aristata # of bins	Waste Watcher 1 bin setup (Recycle only)	Waste Watcher 2 bin setup (No compost)	Waste Watcher 3 bin setup (With compost)	Waste Watcher XL 2 bin setup (No compost)	Waste Watcher XL 3 bin setup (With compost)	
1	TMEC	10	5	20	9	0	0
2	C Building	6		53	14	0	0
3	Seeley Mudd	2		46	4	0	0
4	LHRRB	2		42	6	0	0
5	Gordon Hall	6		19	4	0	0
6	Goldenson	4		55	5	1	0
7	Armenise	2		57	7	0	0
8	Modell Center	6		1	0	0	0
9	Warren Alpert	2		77	8	0	1
10	Countway Library	8		10	4	0	0
11	Courtyard Café	3		0	0	0	0
12	Vanderbilt	9		10	6	0	12
13	HIM	6		125	8	0	0
14	REB-Dental	22		16	2	0	0
15	188 Longwood Dental	6		5	1	0	0
16	180 Longwood	2		9	7	0	0

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WE'VE GOT A GOAL to reduce waste per capita 50% by 2020 from a 2006 baseline, with the aspirational goal of becoming a zero-waste campus

CAMPUS OPERATIONS

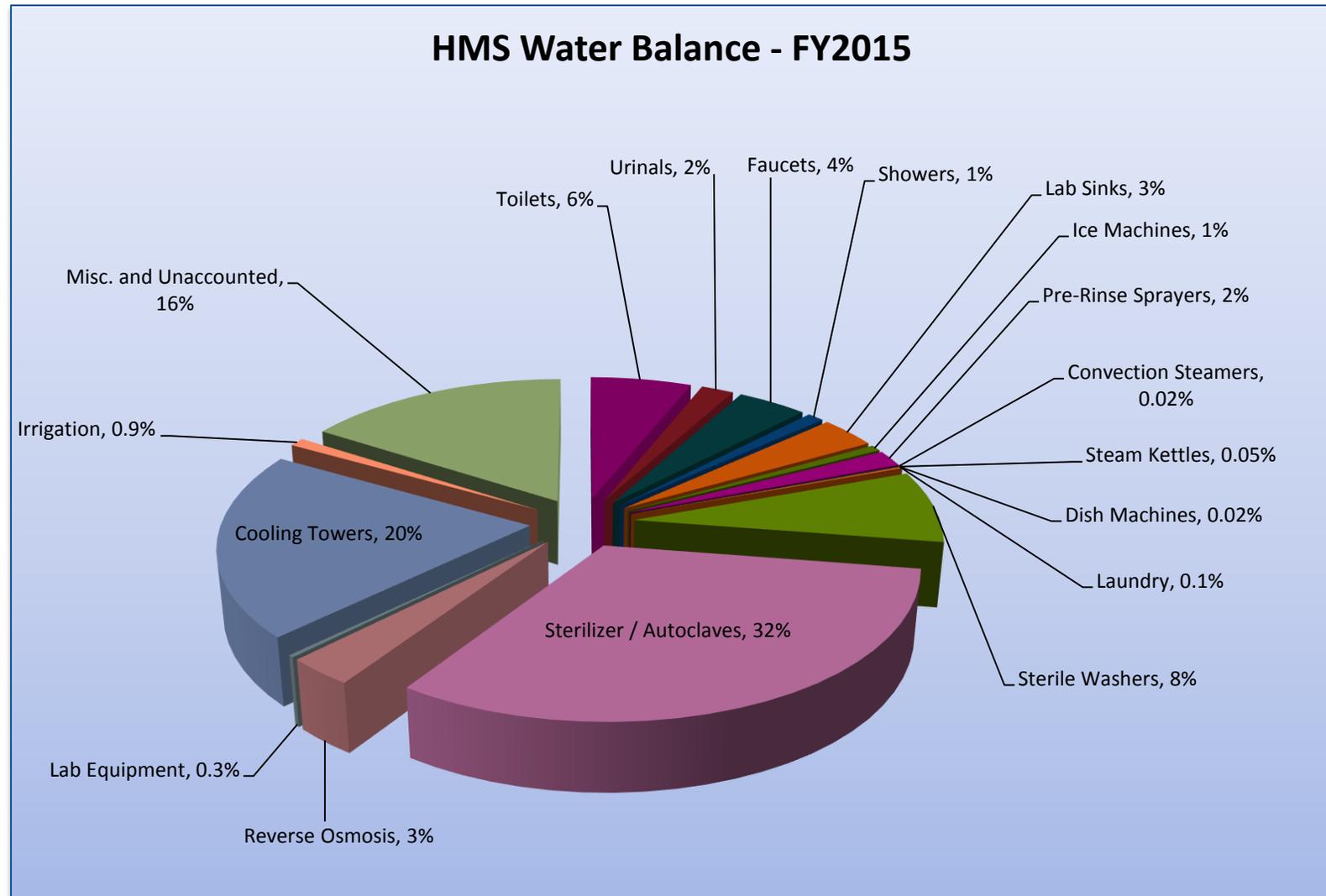


WATER CONSERVATION

CAMPUS-WIDE WATER AUDIT COMPLETED

Completed in June 2016.

Recommendations under consideration for implementation in future years.



CAMPUS OPERATIONS

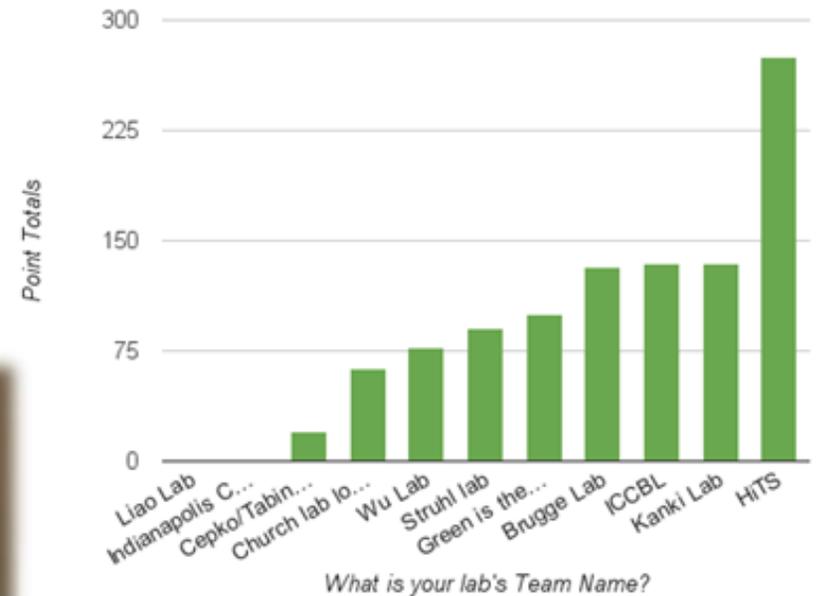


LONGWOOD GREEN LABS COMPETITION

The Longwood Campus held its second Green Lab Competition in 2015. **The Harvard Program in Therapeutic Sciences (HiTS)** won!

11 labs from HMS and Harvard Chan participated.

Longwood Green Lab Competition Point Totals



PI, Peter Sorger, helped clean out a -20 freezer with samples that were older than his graduate students!

CAMPUS OPERATIONS



OVER 6,000 CHEMICAL CONTAINERS COLLECTED ACROSS HARVARD'S LONGWOOD CAMPUS

Campus/School	Collected	"Swapped"
HSPH	900	4
HMS South/HSDM	2,600	--
HMS North	2,500	37
All locations total	6,000	41

The Longwood Campus held its second Chemical Amnesty Day, organized by HMS Operations in partnership with [Environmental Health & Safety](#).

For approximately \$28k, the coordinated series of events engaged about 50 labs and collected over 6,000 unwanted chemical containers for safe disposal and over 41 chemical containers were swapped to labs who needed them.

The event's success depended on **engagement** from a number of departments and stakeholders.

The elimination of unwanted chemical containers reduces the associated risks of storing them on campus and **creates additional storage space** in a limited real estate environment.



NATURE AND ECOSYSTEMS



COUNTWAY COMMUNITY GARDEN

4th Annual
Countway Community Garden
Harvest Festival

When:
Friday, September 18th
3:00-5:00pm

Where:
The Countway Community Garden
Located directly behind the bike cage
in the Countway Plaza

3-4pm: Festival talk
Jenny Houff, Muddy River Herbs

4-5pm: Reception
with treats, fresh herbal tea and live music!

COUNTWAY LIBRARY OF MEDICINE

- ✓ Reorganization of Community Garden plot management “sponsored” plots model – received more applications than plots available
- ✓ Annual **Fall Harvest** festival
- ✓ Annual **Spring Garden Gathering**
- ✓ Initiated Re(Design) Innovation Challenge



NATURE AND ECOSYSTEMS



INITIATED A BI-ANNUAL TOUR OF HARVARD'S ARNOLD ARBORETUM

Autumn Foliage '15



Spring Flowering '16

LILAC SUNDAY AT THE ARNOLD ARBORETUM

SUNDAY, MAY 8TH AT 10:30AM



RSVP AT: LILACSUNDAY.EVENTBRITE.COM



ON 5/8, MEET AT THE KRESGE ENTRANCE, 677 HUNTINGTON AVE, AT 10:30 AM FOR THE FREE SHUTTLE TO THE ARBORETUM



OR JOIN THE GROUP BIKING TO THE ARBORETUM, WHICH WILL BE JOINED BY A MEMBER OF THE HARVARD LONGWOOD BICYCLISTS



This is the second bi-annual trip to the Arnold Arboretum, sponsored by EcoOpportunity, Longwood's Green Team.

The Arnold Arboretum celebrates the flowering of the lilac each year with Lilac Sunday, a day that has tours of the lilacs and other special collections, family activities and food vendors. The lilac collection at the Arnold Arboretum is among the premier collections of these plants in North America.

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WE'VE GOT A COMMITMENT to prioritize conservation, research, and education at Harvard-owned green spaces including the Arnold Arboretum

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HEALTH AND WELL-BEING



HARVARD'S LONGWOOD CAMPUS RECEIVED THE CITY OF BOSTON'S **HIGHEST AWARD** FOR BIKE FRIENDLY BUSINESSES, **THE CHOCOLATE AWARD**

THE LONGWOOD CAMPUS WAS AWARDED **FIRST PLACE** FOR OUR CATEGORY IN THE MASSCOMMUTE BIKE CHALLENGE

The Longwood Campus is home to about **850 bike racks!**

The Harvard Longwood Bicyclists group continues to engage with all stakeholders across the Longwood Campus with **over 1,500 members**. The group advocates for advancement in bike-friendly infrastructure and parking, provides safety and learn-to-bike lessons for the Harvard community,

HARVARD LONGWOOD BIKE FAIR

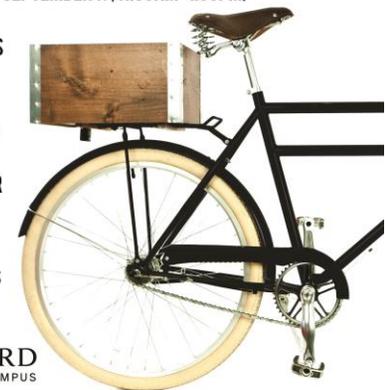
WEDNESDAY, SEPTEMBER 16, 2015

11:30AM – 1:30PM ON THE QUAD PROMENADE AT HMS

(RAINDATE – SEPTEMBER 17, 11:30AM – 1:30PM)

- FREE BASIC BIKE TUNEUPS AND GIVEAWAYS
- MINI CLASSES ON MAINTENANCE & SAFETY
- BIKE VENDORS & INFO FOR AREA CYCLISTS

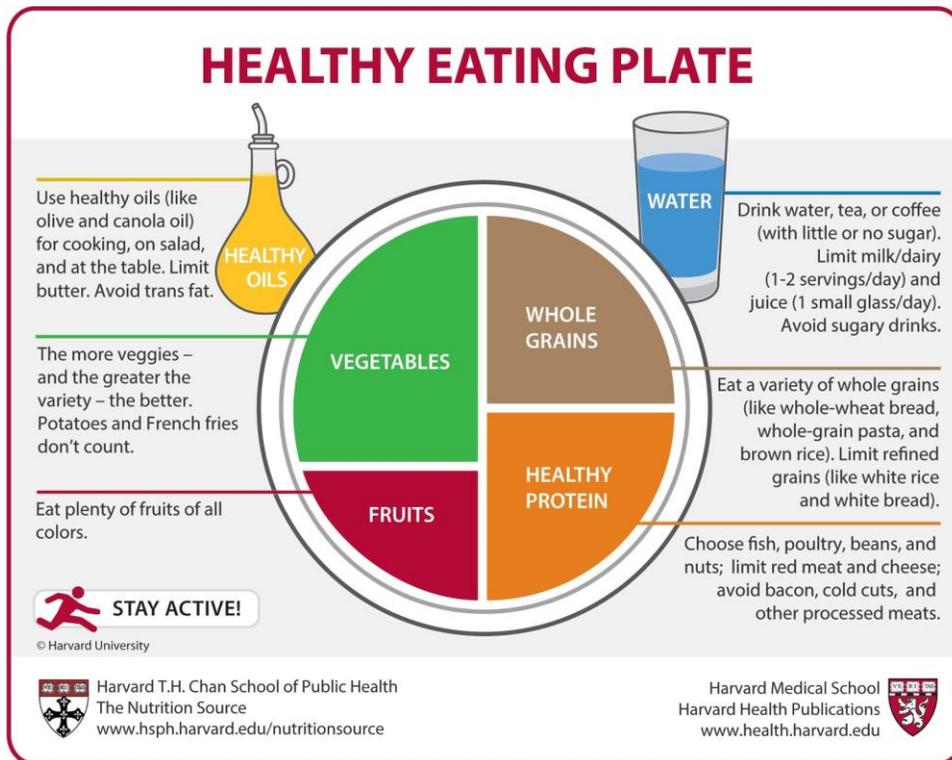
BIKE FAIR UPDATES:
WWW.HSPH.HARVARD.EDU/BIKES



- ✓ Safety, maintenance, and learn to bicycle classes
- ✓ New bike racks in bike cages
 - Bicycle fair
 - Bicycle breakfast
 - “Handlebar” happy hours

HEALTHY AND WELL-BEING

Healthy Eating: Nutrition and Sustainability



Sustainable and Healthful Food Standards Working Group



Participation in MASCO's Farm to LMA



Sustainable food sourcing through Restaurant Associates



Harvard #FoodBetter Conference



HEALTH AND WELL-BEING

Boston Fire Code Change

In partnership with Harvard's office for Sustainability and Green Building Services, HMS' campus Planning office has responded to the change in Boston's fire code by creating finishing standards, which include furniture standards, that aim to minimize exposure to chemicals of concern.



CITY OF BOSTON
IN THE YEAR TWO THOUSAND SIXTEEN
AN ORDINANCE AMENDING
THE BOSTON FIRE PREVENTION CODE

- WHEREAS,** Over the years a significant amount of furniture, including furniture in Boston City Hall, has been manufactured to include flame retardant chemicals; and
- WHEREAS,** Many flame retardant chemicals are known carcinogens that are hazardous to the health of both fire fighters and the public they are sworn to serve; and
- WHEREAS,** New statewide fire prevention standards promote health and safety by eliminating the need for these harmful flame retardants; and
- WHEREAS,** The International Association of Fire Fighters supports these new statewide standards; and
- WHEREAS,** The Boston Fire Prevention Code does not currently align with these new statewide standards;

NOW THEREFORE,

Be it ordained by the City Council of Boston, as follows:

Section 1.

The Boston Fire Prevention Code, Section 9.04 shall be amended by adding the following Subsection 9.04(a)(1):

- (1) Exclusively for the purposes of furnishings identified by the Fire Department Chemist as "Upholstered Furniture" or "Reupholstered Furniture", the classification determined by the Fire Department Chemist shall be made in accordance with the Massachusetts Comprehensive Fire Safety Code, 527 CMR 1.00, Section 12.6.3.

Section 2.

The provisions of this ordinance shall take effect ninety (90) days from the date of enactment.

Filed in Council: March 16, 2016



BUY FLAME RETARDANT-FREE FURNITURE

The best way to minimize risk is to choose flame retardant-free furniture for your next capital project, renovation, or office furniture purchase.

The Sustainability and Energy Management Council, Office for Sustainability, and Strategic Procurement recommend that the Harvard community specify and purchase cost-competitive furniture that is free of flame retardants and meets all new applicable fire safety regulations and flammability standards.

PROJECT MANAGERS

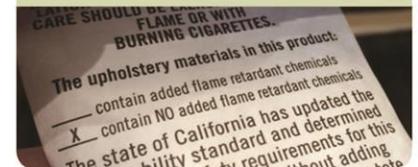
- ✓ Add language to your project's contract and specs stating you would like to purchase furniture free of chemical flame retardants that meets the TB117-2013 standard.
- ✓ Clearly communicate with all vendors that Harvard has a preference for products free of chemical flame retardants.
- ✓ Confirm that the project's code consultant clearly understands Harvard's preference for chemical flame retardant-free furniture when allowed by the updated fire safety code.

PURCHASERS

- ✓ Confirm with your retailer or manufacturer that chemical flame retardants have NOT been added to the product.
- ✓ Confirm that the product has a TB117-2013 label that says it does not contain flame retardant chemicals.
- ✓ Avoid any products with a TB117 or TB133 label.

BUYING TIPS:

- Check the label located under the product or seat cushion to confirm the upholstered material includes no added flame retardants.
- Because some fabrics may still contain chemicals, confirm with your retailer or manufacturer that flame retardants have NOT been added to the product (fabric or foam).
- In order to obtain fully flame retardant-free products, confirm with your manufacturer that flame retardants were not added to any plastic parts.



"Fire retardant foams did not offer a practically significant greater level of open flame safety than did the untreated foams."

—Consumer Product Safety Commission

EDUCATE YOURSELF AND YOUR COMMUNITY

Visit green.harvard.edu/chemicalsofconcern to access educational resources, research highlights, and additional information on how you can reduce exposure to flame retardants at home or in the office.

Contact the Office for Sustainability for Harvard-specific guidance, sample technical specifications, and assistance in purchasing flame retardant-free furniture at 617.495.3822, green.harvard.edu, or sustainability@harvard.edu.

HEALTH AND WELL-BEING

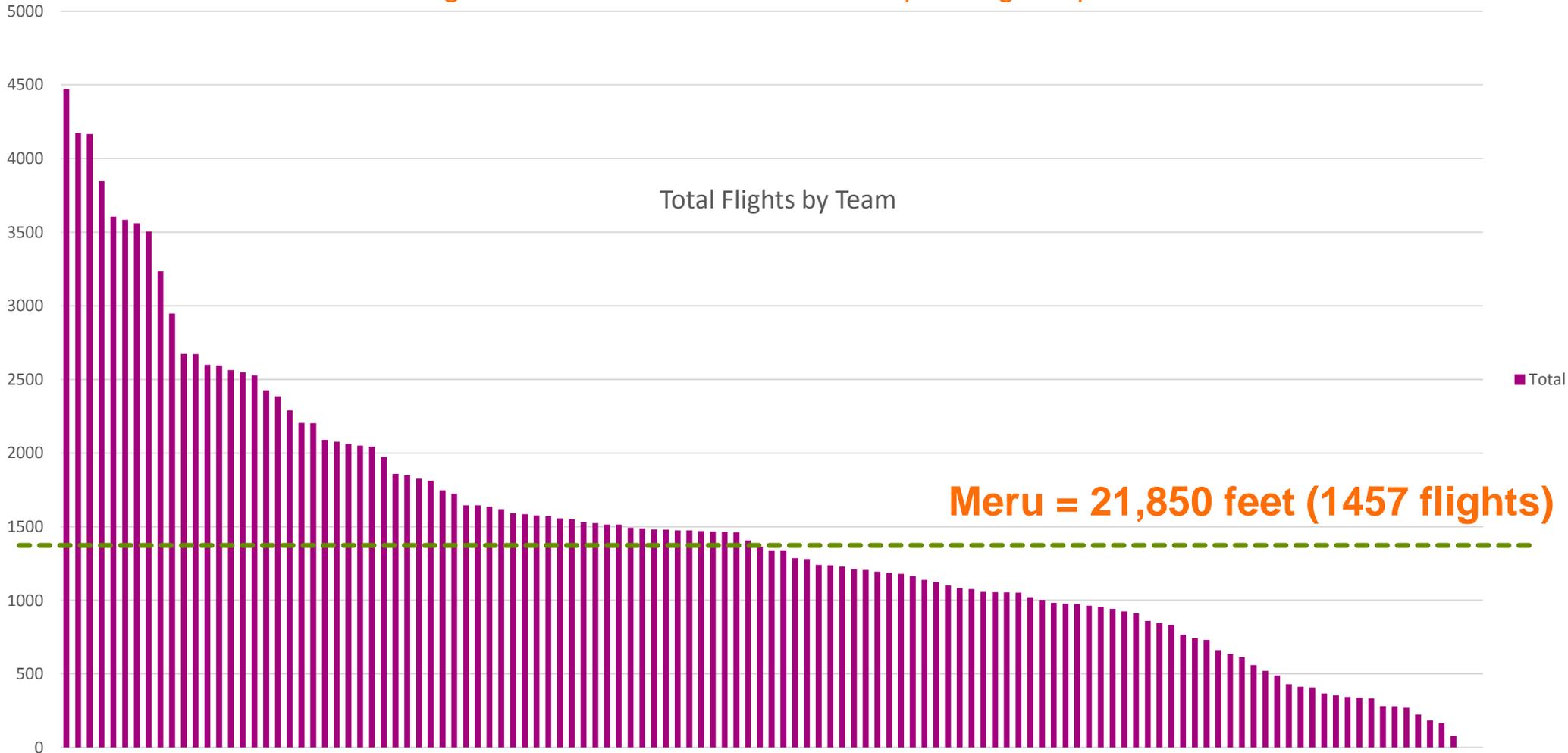
Take the Stairs

TAKE THE STAIRS EXPANDED TO ALL OF HARVARD'S LONGWOOD CAMPUS.

LARGEST NUMBER OF PARTICIPANTS YET!

577 Participants | 121 teams | 58 teams reached Meru!

Strong interest from across Harvard in replicating competition.



CULTURE AND LEARNING



RESEARCHER ENGAGEMENT

GOT ICE?

Take advantage of FREE freezer kits to clear away ice buildup in your Ultra Low Temperature freezers and keep them running efficiently.

Email: GREENLABS@HARVARD.EDU.



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[GREEN.HARVARD.EDU/LABS](https://green.harvard.edu/labs)



5 GREEN TIPS from the Nocera Lab

1. **REUSE** materials, such as packing supplies and pipette tip boxes.
2. **SAVE ENERGY** by consolidating samples to cut down freezer space needed.
3. **COORDINATE INSTRUMENT USE** in the lab to maximize efficient use time.
4. Utilize a **CHEMICAL INVENTORY SYSTEM** to share chemicals with other labs.
5. Use a **REUSABLE MUG!**



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[GREEN.HARVARD.EDU/LABS](https://green.harvard.edu/labs)



New Signage on the M2 Shuttles are **seen by hundreds of Longwood researchers** each day



2nd Longwood **Green Labs Competition**



Over 7,500 unused chemicals were removed from campus because of “Chemical Amnesty Day”

With the environmental footprint of labs being far greater per person than any other space type, engaging the researchers is a top priority. A collaboration between Longwood, MASCO, and the FAS Green team, established sustainability signage on the M2 shuttles that researchers and students ride every day.

CULTURE AND LEARNING



ECOOPPORTUNITY, LONGWOOD'S GREEN TEAM, LED EFFORTS THROUGHOUT THE YEAR THAT ENGAGED THE ENTIRE LONGWOOD CAMPUS COMMUNITY



- ✓ Sustainability Fair
- ✓ Lighting Fair
- ✓ Waste Ambassadors
- ✓ Countway Garden
- ✓ Chemical Amnesty
- ✓ Take the Stairs

For the first time, HMS implemented significant efforts to reduce waste on Class Day by using reusable, biodegradable or recyclable materials. Image: Bobbie Collins

CULTURE AND LEARNING



STAFF AND COMMUNITY ENGAGEMENT



After successfully springing forward for Daylight Savings Time, most of us are getting a little more sunshine in our lives these days. That might explain the sense of optimism that's been in the air at HSPH lately. Or maybe it was that one 50 degree day we had...

Spring is On the Way, Says Calendar

Although there is very little physical evidence pointing to the fact that spring is in our near future, the calendar says that the long-awaited season officially begins with the spring equinox on March 20. How will you be celebrating the end of a long winter? Here at the Eco Mosquito, we plan to start our spring cleaning by springing our offices and labs the once-over, rounding up all unnecessary items, and bringing them down to the Green Room in the basement of Building 1 (just follow the signs). While we're there, we're sure to find just the organizational doorknobs we need in order to finally get our desks in order. And after all that cleaning, we're excited to get our hands dirty again by getting a start on spring gardening. Whether you're prizing the ground for a home vegetable garden or just putting some herbs in a pot on the windowsill, it's good to get some green in your life. If you really want to be a gardener but don't have the space at home, you can always volunteer at the Courtyard Garden. That's right, our campus has its very own garden! It's right around the corner from the Courtyard Library and volunteers will soon begin preparing the garden for another beautiful season of abundant vegetables, flowers, and herbs. If you're interested in volunteering in the garden this spring or summer, just email Heather Cristiano at heather.cristiano@hms.harvard.edu. See you out in the sunshine!



DID YOU KNOW?

Many of your colleagues are going to be spending a more time in the stairwells over the next month, so it just so happens that you'll be seeing a lot of people with flushed faces and visible fidget around the School. The annual Like the Stairs Campaign kicks off on March 19 and runs through April 18. During this time, teams of 4 or 5 will try to reach the goal of climbing 1,069 flights of stairs to simulate climbing Mount Pinaculo, the high mountain in Indonesia. Even non-participants are encouraged to check out the entertaining wall art that has been popping up in the stairwells lately. Participants will be celebrated with prizes and raffish at the annual Earth Week Sustainability Fair on Thursday, April 24. If you're one of the climbers, be sure to keep logging your flights at www.hsp.harvard.edu/likestairs. Happy climbing!

Do Revolving Doors Really Save Energy?

We know that large buildings like those at HSPH use a lot of energy (and money!) to stay warm in the winter and cool in the summer. And it's logical that differences in air pressure cause air to flow in and out of buildings through open doors. But are revolving doors really the answer? Luckily, our neighbors at MIT are on the case! In 2006, a study was conducted on a campus building which showed that the swinging door allowed up to eight times more air flow than the revolving door. On top of that, just 23% of visitors used the revolving door. By extrapolating this data and applying average Boston weather to their equations, the MIT team found a 74% savings in annual energy consumption everyone used the revolving doors, which translates 14.4 tons of savings on carbon dioxide emissions per year. So we know revolving doors save money and energy, but the fact remains that most people go through swinging doors when given the choice. We can only imagine the occasional barely-judging, in-need-of-grease-revving door is to blame. So next time you are presented with the choice, go for a spin!

Contact us at ecoopp@hsp.harvard.edu

Putting the breeze in your ear since 2004



It doesn't seem too long ago that the sun disappeared before we could break free from our offices or labs to enjoy it, and now the longest day of the year is coming and going. June 21 marks the summer solstice, and the best place to enjoy the more than 15 hours of daylight is anywhere besides your office or lab. So get outside as much as possible these days and get yourself some vitamin D!



DID YOU KNOW?

The Harvard Green Room recently underwent a major housekeeping session and treasures were discovered amongst the piles of stuff that people had dropped off, including Polaroid film and two gently used high-end printers. So follow the signs to the Green Room in the basement of Building 1 (no, it's not scary, unless you're scared of free stuff!), between 7:30am and 4:30pm on weekdays. And bring any good loot that's just no use to you anymore, somebody will love it!



Let's Get Rrrready to Rrrreduce, Rrrreuse and Rrrrecycle!

In the spirit of the World Cup getting to you? Considering how athletic those guys are, you may be looking for a less strenuous outlet for your heightened sense of competition. Well, we believe that Harvard scientists are some of the hardest-core competitors around, so we've decided to launch the first Longwood-wide Lab Environmental Competition! Starting on July 7, labs from across campus will compete for four weeks to earn points by cleaning out freezers, donating unwanted equipment and sharing best practices. At the end of the competition, the lab with the most points will win a special wine and cheese party, and will probably also go with a less cluttered and more efficient lab to boot. All participating labs will be able to exchange their points for a variety of prizes, ranging from sports and lab related to a breakfast event. We hope you'll help spread the word in your department and encourage your labs to participate. If your lab is ready to throw down, contact Katrina Rudnicki (katrina_rudnicki@hms.harvard.edu) at HMS or Hardeep Ramu (hardeep@hsp.harvard.edu) at HSPH. Like good coaches, they'll help prepare you for the competition by distributing decision kits so that each lab in your department has all the tools needed to clean out their freezers, and also by joining you at an upcoming departmental meeting to talk for a few minutes about the competition. Find out more and register your lab at green.harvard.edu/programs/green-lab.

Is it Really Worth it to Buy Organic Produce?

Here at the Eco Mosquito, we like to ask the tough questions, especially when there's the possibility of saving money involved. So we want to know, how much healthier is organic produce, and is it worth it to spend those extra cents per pound? You may have missed the excellent HSPH Forum in May, which focused on pesticides and food as part of the Andler Series in Current Science Controversies. (Ok, controversy? So what's the deal? Well, it turns out that there's a lack of public health research on pesticide safety because there's no real control population—we are all exposed to pesticides to some degree. Yikes. We do know that many pesticides are toxic to the human nervous system, but we don't know if our food is causing enough exposure to do harm. In terms of safety levels, we only have one guide: tolerance. So, while there may currently be an acceptable daily intake, we still don't know how these chemicals affect us in the long run. We also know that organic food contains less pesticides and will help us to reduce our exposure. So, if you can afford it, buying organic could be a great investment in your health. And if you have to go with non-organic, it's good to know that some produce is cleaner than others. The Environmental Working Group's annual pesticide residue testing data from the USDA and FDA is come up with these rankings.

THE DIRTY DOZEN	THE CLEAN FIFTEEN
Apples	Avocados
Strawberries	Sweet corn
Grapes	Pineapples
Celery	Cabbage
Peaches	Frozen sweet peas
Spinach	Onions
Sweet bell peppers	Asparagus
Imported sweet peas	Mushrooms
Cucumbers	Papaya
Cherry tomatoes	Kale
Imported snap peas	Eggplant
Potatoes	Carpasifruit
	Cauliflower

Always try to buy these items and wash them thoroughly if you can't.

Even in their conventional forms, these are the produce less likely to contain pesticide residue, but you should still wash them!

Contact us at ecoopp@hsp.harvard.edu



EcoMosquito newsletter provides accessible and fresh sustainability content to the Longwood community

Inaugural Spring Garden Gathering

EcoOp volunteers at Longwood Class Day events – waste ambassadors

As the controllers of many campus resources, staff members play a vital role in our campus and also have significant influence on the experiences of students. Giving them opportunities to get involved can have significant impacts in many areas. In addition, many of the programs we offer contribute to improving the work/life balance of these members of our community.

ORIGINAL CONTENT and SOCIAL ENGAGEMENT

Published content on green.harvard.edu in FY16:

Website engagement:

Unique visitors for your top **10** most visited pages totals over: **3,000**

Average time on page for top **10** most visited pages: **2 minutes, 21 seconds**

Top 10 pages:

1. Impact of green buildings on cognitive function (HCSPH research highlight)
2. HMS Landing Page
3. De-ice your freezer in 4 steps (HMS lab featured)
4. Empirical Case for a Plant-based Diet (HCSPH Research highlight)
5. 6 strategies to create more sustainable meals (HCSPH resource)
6. Healthy Eating Plate (HCSPH resource)
7. 5 tips for sustainable eating (HCSPH resource)
8. Encourage mindful eating with a mindful eating corner
9. Start an interoffice envelope reuse system (EcoOp)
10. HCSPH Landing Page

OFS sends a **monthly newsletter** to a list of **more than 10,000** students, staff, faculty, and members of the outside community.

HSPH/HMS is represented in each newsletter through **research**, shout outs, stories, tools or resources, or links to social media posts.



HCSPH/HMS provided **4 photos** of the **80** photos posted by OFS to Instagram. Including the awesome video of Donna Shalala giving EcoOp a shout out.



OFS tweets 6-8 times per day. On average, HSPH/HMS are mentioned in 10-12 tweets per week (heavily research-related content). OFS also retweets HCSPH, HSPH Nutrition, and CHGE frequently.



OFS posts once daily to Facebook. Generally, HCSPH/HMS (mostly research) are represented 2-3 times per month.