

240913 Meeting Minutes

Attendees: Kate Malecek, Ben Ben, Tasha Cammidge, Henry P, Miles Stone, Dennis Ko, Alyssa Player, Vijaya Kumar, Annie Lam, Cate Holmes, Melissa McPherson, Emily Stanton, Cong Cao, Hulbert Zeng, Sonia Yuan

This month, [RSVP here](#) to order food from [Cava](#) (order limit of \$20)! **The deadline for submitting your food order is Thursday 9am.** I will also bring a kettle so we can boil hot water and I will bring some yummy hot chocolate packets and tea bags for folks to enjoy! If you prefer, BYOT. **Please remember to bring your laptops.**

Will update [Restaurant Guide](#) and our [Coffee, Breakfast, and Dessert Guide](#)

- Compostable cutlery! Compostable straws!
- Order limit of \$200 in one order from [Cava website](#) (\$4 delivery fee), \$100 limit [from DoorDash](#) (\$1 delivery fee)

Introductions ...

[Million Advocates for Sustainable Science](#) Petition

- International Institute for Sustainable Laboratories (I2SL) along with My Green Lab are petitioning to change funding granting agency policy to promote sustainable research
- By signing the letter you can help transform how science funding organizations set expectations for efficiency, resiliency, and sustainability in the way scientific research is conducted
- Reached 1000+ signatures!

Green Labs Monthly Tip:

- [Cute video from University of Groningen \(UG\)'s Green Labs program!](#)
- #GreenLabsGOALS!

Updates

- **21 Certified labs!! WHOOOOO**
 - Please get CERTIFIED TODAY! To get certified, finish the easy, 30-minute [Green Labs Certification](#) and submit it to sustainability@caltech.edu.
 - Certified Labs-exclusive event planned for April!

Updates – Pilot Programs

- Lomi Composter Update
 - RSI: 3 Lomis installed in September 2024!!
 - 221 kg of dirt (1109 kg (or 2446 lbs!) food waste)
 - Donation of \$345 worth of supplies!!
- Pipette Tip Box Recycling
 - 3,118 gallons of plastic waste (1,400 lbs!) diverted *
- -70°C/-80°C Comparison Pilot
 - 5 labs involved, collaborating with NIH
- PolyCarbin (recycled pipette tip boxes for pilot)

- Initial order replaced 31 pounds of crude oil and reduced 122 pounds of CO2E via sustainable procurement
- NOTE: KM/JA says their Beacon does not work with these tips, so GL will take them back and redistribute (either to schools or other labs), make sure they can use non-LTS sets, perhaps also community colleges? Reach out to LEAF program to see if they are interested,
- VK: often high schools can take only limited amounts of supplies
- 2024 [Freezer Challenge](#)– next year make a higher priority!
 - KM: fold this into the spring clean campaign next year also
 - January 1 – July 1, 2024
 - Labs compete to improve freezer efficiency, sample accessibility, reduced risks, cost-savings, and energy-savings for their lab's cold storage!
 - Fun, free program
 - Scored on different categories (like defrosting freezers or inventorying)
 - Awards given at I2SL for the winners!
 - Will provide internal prizes, AND a popsicle party in the summer!

Fume Hood MASH/STS Summer Program

- Caltech Green Labs summer program will be a combination of two programs: 1) [this study from MIT](#), and 2) [this program by CU Boulder](#). We hope to build and install sensors, educate users, and run a fun reward-based campaign for users who show the greatest commitment and improvement.
- GG (our intern!!) will be running this program over the summer
- Plan is approved by Facilities, EHS, BBE and Sustainability AND SAFETY!
- Genevieve has made updates to the original model and has made 24 sensors!
- Installed 21
 - BI (2), Noyes (2), Kerckhoff (1), Broad (10), Schlinger (2), Chen (1), Keck (2), Linde (1)
- Turning on buzzers next week or the week after?
 - If issues we will just track height data
- Make more for future use? Maybe a working session
- Idea to incorporate data collection, so the first few weeks of the pilot would be making the sensors, then installing them without the buzzers, collect data for 2 weeks, then turn on sensor buzzers for 1 week, then have the competition for 2 weeks
 - Genevieve has made several updates to the original model
- Saw real behavioural changes! GG is writing it up and doing analysis now!

Updates – Events

- Lightning Talks September 20 1-3pm
 - Vendor sponsor Eppendorf!
 - If you want to present or volunteer, please let me know!
 - Social media – do a #labwaste event where folks take pictures of the waste they create in a day? Perhaps AFTER the event all attendees do this?
 - Updates on the -70/-80 comparison
 - Presentation on the fume hood pilot project results
 - Topics?
 - (from last time) KM: dining guides topic update, cleanup event

- (from last time) JA: revive/start the GL flip book, ways to incorporate GL into safety for trainees from day 1, especially now that we have a new safety office person (Manali)
- JL: should be able to put some slides together and get the data finalized by then for year 1

Updates – Social Media

- [Follow us on social media](#)
- Do you have time to [film a short video](#) or [write a blog post](#) I2SL is asking for videos or blogs, and there is a \$500 stipend available!
- Letters to the editor California Tech (<https://tech.caltech.edu/about/>)
- JA presented her slides (see Drive for details) and made a case for social media at Caltech
- [TC will create a folder in the Drive for this](#) so we can collaborate and make sure we are covering interesting topics
-
- Next social media post on #LabWasteWeek
- JA: we've been tagged in some cool things including international competitions and such, so follow us!!

Updates – Upcoming Events

- Lightning Talks September 20 1-3pm Chen 100
 - o Vendor sponsor Eppendorf!
 - o **PORTO'S BAKERY**
 - o If you want to present or volunteer, please let me know!
 - o Social media – do a #labwaste event where folks take pictures of the waste they create in a day? Perhaps AFTER the event all attendees do this?
 - o Updates on the -70/-80 comparison
 - o Presentation on the fume hood pilot project results
 - o Speakers? (if you don't have a topic I have TONS)
- #LabWasteWeek??
- Resource Fair September 24
- Orientation Event with GSC Sustainability Group September 26
- September 27 BBE Retreat
 - o Have some information being posted during events
- October 2 – first Styrofoam recycling day!
- RSI occupied end of September!
- Newsletter (October)
 - o Styrofoam, Composting Event, Certification Challenge
-

Styrofoam Bowling Event

- 75 people stopped by (representing 12 divisions/groups)
- 14 labs participated and brought Styrofoam
- Got 1 entire dumpster of Styrofoam!
- NEB donated a great prize – will announce at the LT event!



Styrofoam Recycling Pilot Program

- **Launching October 2!**
- [Sign the petition!](#)
- [Technical bulletin from I2SL](#)
- [LCA of Styrofoam](#)
- [How to do LCAs](#)
- Support granted
 - o Space in Holliston for storing Styrofoam
 - o Sustainability and BBE
 - o Transportation to move waste to vendor (can move 3 3-yard dumpsters at a time for a fee)
- Proposed models (group voted last week)
 - o **Model 2: Roaming Weekly Dropoff Locations:** We have a dropoff day, once a month (say Wednesday) in each building served, then on Thursday TC books Transportation to come and pick it all up. Labs need to store Styrofoam for some time. Will ship out Styrofoam once 3 dumpsters are full.
 - o Volunteers need to help post signage, do QC checks on what is being recycled
- Buildings involved? 1-4 depending on plan
 - o Chen (TC) – loading dock
 - o Linde (CH)
 - o BI (Beacon Lab)
 - o Alles (VK) – mail room
 - o Schlinger (DK)
 - o BBB? – room by elevators on Basement level
 - o Broad? – on main floor near other recycling bins

Green Event Initiative

- Maybe launch this in 2025
- Some good program examples include [UCLA](#) and [Yale](#)



- Carbon counter
 - o GG will try to build
 - Has chips with different colours, and labels for each city/street to determine distance, each slot is a different method of commute (walk, bike, car, etc).
 - o **GG would like help if anyone is interested!**

Waste Audits Initiative

- What are [waste audits](#)?
 - o Recording what is in waste bins, recycle bins, solvent waste containers
 - o Record what is wasted after a protocol or kit
 - Would love to have a lab offer up a protocol and see if we can modify it
 - Volunteers?
 - KM: able to bring bead cleanup protocol for next time – uses a lot of tips!!
 - o For example: my lab does PCRs and we aspirate water THEN master mix, so we can reuse the same tip (which halves our tip usage for the master mix prep!)
 - o We also reuse conical tubes for reagents, and repeater pipette tips for aliquoting reagents
 - o CC: capturing air pollution? Emissions, water, air, soil, lab waste from experiments
 - o KM: power meter initiative; green chemistry related to solvent substitution, and reduce pollution
- Why conduct waste audits?
 - o Understand volume of waste and determine priorities, or target specific protocols etc, determine what we can change
 - o Can be useful to show your lab if they are properly recycling, and determine why things are not being recycled and adopt signage, different sized bins, etc. to help make it easy and simple to recycle properly
 - If recycling bins are too contaminated with non-recyclables, custodial just tosses the whole bin!
 - [MIT study](#)
 - o Change how we purchase
 - Can contact our suppliers and ask for alternatives with less waste, or that are more recyclable eco-friendly
 - o Reduce packaging and shipping
 - Consolidate orders/suppliers within the lab or between labs
 - Purchase in bulk

- Right-size purchases
 - Reuse packaging like coolers
 - Collaborate with other labs or universities to see if they have alternatives that create less waste, share our best practice tips
 - Research and find alternatives (for example, replacing single-use plastics with glassware)
 - Recycling waste
 - Including solvent waste recycling or plastic recycling!
 - [Kimberly Clark](#), [Terracycle](#), and [Medline](#) all offer **glove recycling programs**.
 - [Corning](#) offers flexible **package recycling programs**.
 - VK: encourage labs to stop wasting so much
 - MM: SAVE MONEY
 - KM: can we have the new Materials and Recycling Coordinator come give a talk?
 - TC: will ask! Great idea! Maybe for Feb or something?
- How to conduct a waste audit?
 - KM: 2 ideas from above: protocol adjustments and waste streams, labs are more likely to do waste stream ones, so we focus on that for now
 -
 - Step 1: Inform custodial and lab of the effort
 - [Waste audit template form](#)
 - [Example checklist](#)
 - KM: how much time? Talk to custodian and lab, record for 1 day or 1 week, context of lab cleanup at that time could calculate cost of things they are throwing away esp expired reagents that are over-ordered (page 1)
 - Step 2: Keep waste for a day/week/protocol
 - VK: Broad categories, 3 bins or 5 bins, gloves, plastics paper (page 2) during event (within reason, for biohazard bins can estimate) so all waste from those categories goes into those specific bins and weigh it afterwards
 - OR divide out the waste from each category (recycling, trash, hazardous waste/solvent waste, etc.) and track
 - Step 3: DOCUMENT (photos?)
 - DK: do folks use inventory systems? If you have overbought, don't find it you buy more, so focus on right-sizing protocols or purchasing
 - KM: no pattern of expiry dates for reagents, no "smell test" if something is expired if it will work, asking manufacturer for evidence of expiry
 - MM: OLAR sends back food that has short expiry date and get new, ask for at least 3 month date or something like that, incorporate into purchasing procedure?
 - Step 4: Tell lab of the results
 - What to do with data?
 - Recommend reuse where possible
 - Refuse (consolidating orders, talking with vendors about wastage)
 - Recycle (use tipone etc that have recycling programs on campus OR products that are able to be recycled)

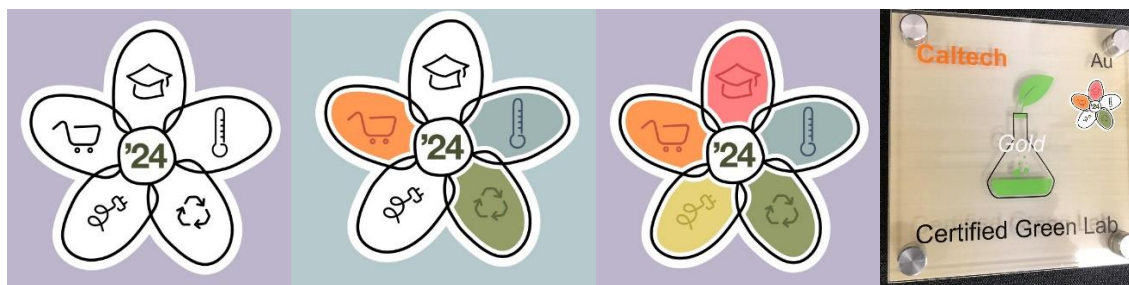
- KM: provide for spring cleanup, opportunity to advertise for programs we already have and GL guide etc., if complete it they can come to the lab cleanup party, give us data too on brands of gloves and tips etc. aspects of recycling policy, filing things incorrectly, data about behaviour compliance , bring to EHS that they don't know how to recycle
 - Work with members to offer recommendations
 - VK: Where do you think you can reduce volume of waste for your lab? Make a summary page on the site, post ideas, lessons learned and what do you think other labs could benefit from (ethanol prep)
 - MM: "Tips for tips" "More tips for Less Tips!" (VK)
 - Can also update our recycling signage
 - Suggest lab meeting updates / QC / Check-ins
 -
 - Some other resources:
 - [University of Bristol Plastics Guidance](#)
 - Article – [Reducing Plastics in an Microbiology Lab](#)
 - Article – [UCLA Lab Waste Survey](#)
 - Can we create a protocol / resources to help labs conduct one? Do we want to?
 - Yes?! TC will work on making a document for next time
 - TC and KM will bring protocols that we can examine and see if there are ways to optimize
 - KM: tie into the cleanup event?
 - KM: will let us use the data they send (if they send us pictures) on what brands folks purchase etc.

Fact Sheets Updates

- Rough drafts will be posted to the [Drive](#) for:
 - Energy Vampire *
 - Lynchpin fact sheet?
 - Energy Star
 - KM: like the upright version of the graph, it is easier to read
 - Fume Hood
 - Recycling
 - Cold Storage
 - Purchasing
 - TechMart Green Designation
- Spent rest of time working on engagement resources
- KM: make sure we say that it is from the Survey, adding to website
- KM: bring the posters to the LT event and have people vote!!

GROUP WORKED ON ENGAGEMENT PROGRAM AS DIRECTED BY KATE MALECEK

- STICKERS!!
 - o MS presented ideas to the group, pictures below



- From last meeting:
 - o TS: very cute
 - o TC: can even use sticker paper we already have to print them
 - o MS: will have the one with the white background be the main sticker, then add coloured patch stickers as requirements are met for each category (5 from previous meetings, including education, cold storage, recycling, energy efficiency, purchasing)
 - o MS: modelled after the original GL logo designs
 - o TC: is this motivational? – group nodded YES
 - o CH: what happens when you get all 5? Could make the middle sparkly or gold or something
 - TC: or holographic!
 - o MS: yes, the middle could definitely be used, it is boring now
- From this meeting:
 - o BB: website mods for each leaf (have each leaf and a definition on the website)
 - o AP: have a leaf for every event, add it to the poster or something
 - o DK: helmet stickers from football players helmets
 - o KM: also in the future can give “stickers” for each lab website, put on our website too etc.
 - o KM: perhaps once launched, we have a deadline for changes, announce winner of “Most Changes” or “Best Lab” or something at certification party
 - o

For next time

- Certification
 - o Takes ½ hour
 - o Very simple!
 - o See <https://greenlabs.caltech.edu> for the form
 - o Get a plaque!
 - o Green Labs will give you bins and signage for your lab!
 - o Only for Green Labs Certified labs
 - Stickers

- Can order stickers through us and we will print them and drop them off!
 - Three sizes (but fully customizable) and three colours/messages (1", 1.5", 2")
 - Help encourage behavioural changes
 - Recycling bins
 - "slim jim" style
-
- Photos!
 - Work on Action Plan
 - Anything Else?

No working meeting this month – see everyone at the Lightning Talks Event!

Next Meeting October 11th 12pm-1:30pm Chen 240

Bring a friend and get a RocketBook!

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green
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CALL FOR

LIGHTNING TALKS

3 MINUTE TALKS HIGHLIGHTING LAB SUSTAINABILITY INITIATIVES

Date: FRIDAY, SEPTEMBER 20TH

When: 12:30-3pm (talks start at 1pm)

Where: Chen 100

In this zero-waste event, Green Labs is providing food, sustainable giveaways, and great conversations surrounding sustainable labs!

DO YOU HAVE A SUSTAINABLE INITIATIVE you would like to implement or share that makes your lab more efficient or sustainable?

DO YOU WANT TO ATTEND this event and hear about exciting sustainable initiatives?



RSVP to our event.

All are welcome!

Presenters will be gifted a **FREE ROCKETBOOK!**



Attendees will also get entered into a fun **RAFFLE** with **GREAT PRIZES!**



Or check our [website](#) for more information about this event or to find Green Labs tips to make your lab more sustainable!

Sustainably printed on 100% recycled paper!