

230811 Meeting Minutes

Attendees: Kate Malecek, Ben Ben, Tasha Cammidge, Vijaya Kumar, Matthew Langley, RJ Chadha, Eric Kwan, Yvette Garcia-Flores, James Linton, Jaasiel Alvarez

For lunch this month, we ordered from [Naughty Vegan Panda!](#) **In your RSVP**, folks indicated their preferred vegan sushi roll(s) for a platter and a vegan side we will shared. Note that it was delayed until 1230 due to the restaurant not opening until 12!!

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
- KM: suggested we could promote this in our newsletters, and post posters, could promote over Earth Month

Green Labs Monthly Tip:

- Purchase energy-efficient monitors and computers
- Turn off computers at night
- Don't have a screensaver!
- Use sleep settings when your computer is on and decrease the time it takes to go to sleep
- Turn your brightness down, and turn off Bluetooth and WiFi when not in use
- Close apps that run in the background
- Reuse and recycle old computers and devices through Caltech's e-waste program

Updates!

- No new Certified Green Labs this month
 - BUT if you want to, please get CERTIFIED TODAY! To get certified, finish the easy, 30-minute [Green Labs Certification](#) and submit it to sustainability@caltech.edu.
- Tip boxes recycling program (VK)
 - USA Scientific
 - Since May 2023 with help from Trinity Dorger
 - Locations: Alles, Braun, BI, Broad (2 bins), Chen
 - Total of 760 gallons plastic waste diverted
 - Do not have to separate hard and soft plastics
 - Does anyone have friends and colleagues in BI? This bin is not used
 - Move this bin to Spalding?
 - Genesee
 - From 9/2023 with help from Mary Tutty
 - Setup similar to TipOne

- JL: wants to ask Rainin too, wants to leverage that Genesee and USASci have bins to get them to take action and compete with these other companies
 - JL: also reached out to NEB for recycling cool packs, but haven't heard back, suggested that many voices coming back to them might motivate them to participate more
 - KM: Styrofoam recycling program so good, why are they so hesitant to take the packs back?
 - YGF: might be because their quality is compromised
 - VK: packs are biodegradable, but gardens here not interested in utilizing them
 - KM: want to see the MSDS sheets
 - TC: Want to leverage new contracts with them, so putting pressure on purchasing to incorporate language that forces them to take responsibility of their waste
- Grenova Tip Washer Pilot Project
 - KM: Grant due in October worth 150K, website has descriptions of old projects they have funded, metrics (like carbon, water, energy) are favoured, and they want to know what aspect this study offsets (even though tip washing is not necessarily research, we do move the needle on water and energy etc use)
 - KM: we are visiting a labcore in a few weeks to see operation in action, hopefully they can advocate for the machine, we want to hear about their experiences
 - We are looking into getting one like in the picture (below) with 2 storage units with UV sterilization, a washer below, and carboys on the bottom rack

Action Plan

- Lomi Competition for Fall 2023 – signs going up next week
 - Adding another Lomi in Church? Following up with student who is interested
 - Diverted 137 L (36 G) (685 L (181 G) food waste turned to dirt!)
- Green Labs Certification push
 - Until Nov 30, then have a social in December
- Events/Restaurant Guide
 - Finished by October, looking AMAZING! Thanks again to all those who contributed
 - Will be a living document, so will update semi-regularly with new choices and options
- Pilot program presentations in Nov
 - No one has applied, so we won't do this event
 - Form is available on our website
- -70/-80 comparison project
 - More information below meeting minutes for those interested
 - Call for samples posted, brought additional signs if anyone wants to take them back to their spaces
 - JL: did one test after one week, will do one at 6 months, and another after 1 year then do the data comparison

- Already mammalian cells don't do well in -20 but are doing well in -70 and -80 (equally well)
 - For glycerol stocks yield and biomass have no difference for all three temperatures, protein is consistently good
 - Hopefully after 1 year we will have good data to present to Caltech
 - JL willing to show folks where he has put the samples if anyone wants to add to it
 - Only concern JL sees with increasing the T to -70 so far is that we have less time to react to a power outage, but the power savings alone (30%!) more than outweigh that buffer time (buffer time is less than 30 minutes extra)
- Speaking at I2SL in October!
- Tentative plans for 2024
 - Lab Cleanup Event January – April
 - List of chores for labs to use
 - Resources available like magnets for freezer cleanout or inventory google sheets
 - Each participating lab will provide pictures of their cleanup by midnight April 31 to be eligible for lunch in May
 - Prizes will be given for biggest before and after difference, and for the “weirdest thing found”
 - Labs can also submit the “weirdest thing found” pictures for a prize
 - Sponsors for the event? USA Sci?
 - Lunch will be pizza (all vegetarian options!)?
 - Lightning Talks in April
 - Green Labs Certification push January – April (social in May/June)
 - Styrofoam Recycling Pilot
 - No updates
 - Sonita bringing our proposal to their leadership to see if we can use the stockroom for drop-off of Styrofoam
 - Also looking into aggregating order function through TM with TF and purchasing
 - Also found a vendor to pick up the Styrofoam, just need Caltech to approve a place to store it, hopefully hear something about this soon (from DW)
 - Anything else?

Plans for 2024 - Sending out an [anonymous Google Forms](#) sheet for folks to provide feedback also!

All answers here are anonymized and given in normal text. **Questions are bolded.**

- **Does anyone else want to give an update on an ongoing project?**
- **How do folks feel about our group?**
 - **Does it need a different structure?**
 - **Are emails effective? Are meetings?**
 - The group thinks monthly meetings are good, could make it every 6 weeks or skip one if needed though
 - Monthly meetings help everyone stay on track and remind them to get work done on projects

- Updates at the beginning of the meeting are good, but we could prioritize them or chose a single one to focus on
 - This might give others a chance to present and have a more in-depth discussion of our ongoing projects rather than the surface-level of the updates
 - TC will email around the week before to see if anyone wants to present, take 15 mins or so to present it properly and then discuss
 - Could leave more time to float ideas and discuss, don't want to be too rigorous, folks like that the meetings are fluid and we have time to talk about the projects in depth, don't over-structuralize it
- Emails
 - Sometimes too long
 - Might put a TL;DR at beginning, then keep rest of the email since some folks are interested
 - Could work on underlining or colour-coding emails
 - Highlight main point at beginning then move on to larger email below
 -
- **What projects from 2023 worked well? Which ones need some work?**
 - Lomi
 - Pipette box
 - Need to make it apply to more vendors, in 2024 may take data collected and see if BBE/facilities is willing to incorporate this into their workflows and take responsibility for this waste, asking the reps to do it indefinitely seems like a bad plan
 - Want to get more vendors on board as well (as discussed above, with Rainin etc)
 - Make it accessible to all of campus
 - -70/80
 - Only know how it is going after 1 year, so working on getting samples
 - Certification (discussed below)
 - Grenova (discussed above)
 - Keeping a line to DW is useful, talk to him twice a year or so to keep him updated, metrics on these projects crucial so TC will continue to monitor and report
 - MC on board for initiatives but he has more of a facilities angle, try to get him on board with taking these projects to the next level
- **What can we do better to encourage Green Labs Certification?**
 - **What has held folks back?**
 - Need to maintain certification, so focussing on re-up project to keep labs engaged in years after initial certification
 - Could have program where they submit new form (or same form) and get a sticker of participation to show they have done it year after year
 - Try for representatives in each lab, related to safety training/safety officers
 - DW didn't like this idea, but we want to broach it again, those members could come to the meeting and incorporate changes into their labs
 - Should try to target safety officers in each lab to incorporate sustainability, point them to recycling etc, promote green behaviours

- Could make a flip book (like the emergency response guide) for every lab, or a postcard version of the Guide
 - Events useful to keeping up engagement of new labs, barrier low, good amenities to labs that are certified
 - Trainees may be intimidated about participating, especially if they are not involved in purchasing, and Lab manager might be busy
 - Line to senior staff crucial, if they are behind it is more likely to succeed, reach out to them more directly and make it clear that junior researchers can participate
 - **What do folks want to focus on for 2024?**
 - Getting safety officers involved in this process
 - Folks really liked the postcard idea!
 - Lab manager can assign that job to someone,
 - Want more EHS involvement, incorporate GL into safety training somehow (maybe reach out to Breena since sometimes folks have trouble reaching other EHS members)
 - More PI involvement
 - Presenting to PIs, probably next Feb, need to make more signage and make them more aware of the program to decrease barrier or disinterest
 - Targeted emails to PIs
 - Expand the program, especially to Chemistry
 - Want to post signs in Crellin, Noyes, Church etc
 - Present to PIs in Chem (and in BBE) and maybe elsewhere?
 - Maybe present to Chem GSA?
 - Contact Paula Martinez for getting into the Chem newsletter
 - Use the Admins network (who do they report to?) maybe Ann Mao
 - RSI involvement
 - Capitalize on the fact that the building is opening in 2024
 - Make them walk the walk
 - Talk to faculty in RSI, having a person in their organization involved with GL will get us a seat at the table? And also get the word out about our work
 - Talk to Dianne Newman, and others, to spread the word also
 - Come to them with DATA, especially those related to costs, energy audit needs to be made available and put at the forefront
- (ran out of time, so next questions saved for next time!)
- **What goals should we have for our group in 2024?**
 - **What about in our labs?**
 - **Is the Green Labs Guide useful? What do we want to add to the 2024 version?**
 - **Is the website useful? What things do we want to add/change in 2024?**
 - **Final thoughts/comments/suggestions?**

For next time

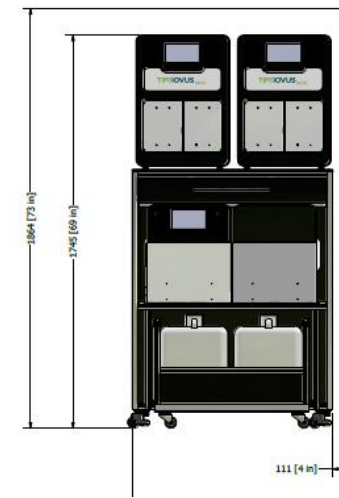
- Certification
 - Takes ½ hour
 - Very simple!
 - See <https://greenlabs.caltech.edu> for the form

- Get a plaque!
- Green Labs will give you bins and signage for your lab!
- Photos!
- Work on Action Plan
- Slack?
- Anything Else?

Next Meeting October 13th 12pm-1:30pm Chen 240
Bring a friend and get a RocketBook!

More information:

- Genova model



- -70°C/-80°C Comparison Pilot
 - From Lightning Event - Manisha Kapasiawala
 - Collect samples from several interested labs
 - Determine a robust way to compare samples
 - Store in both a -70°C and a -80°C and compare over multiple years
 - Gradinaru lab has a -70°C?
 - From last meeting
 - JL: he raised this idea with David Warren at the BBE event, we could present the data to the community to convince them with data, using machines with similar ages and same location
 - KM: Jesse Flores may have ability to look at tracking to account for blips in temperature
 - NS: Maz lab would be interested in supplying samples
 - JL: could use sterlings in Freezer Farm (TC, JL, and NS offer their -80s)

- JL/KM: could keep samples in -20 for a control, use a TX/TL control, do protein, DNA etc, every 6 months take a sample and test it, and just extrapolate data from there
 - We moved on to add to the Drive document
 - Testing
 - Need controls of things that will fail
 - Ask about timing for failure protection
 - Schedule testing schedule for samples (some once a month for 6 months, once in 6 months, and once on year) depending on sample type
 - Include results for 6 months tests in 2024 second quarter newsletter
 - Possibly work into a publication for lab managers or something, help convince PIs, but political
 - Series of magnets or posters for advertisement
 - Make a figure for cost savings on website
 - Ben Bekey found resources online that he will share with group
 - (TC thinks it was this)
 - TC will share resources to group and ask that folks continue to plan out the project so it can be underway by August?

Lab	Samples	Timeline	Confirmation Tests
Elowitz	Protein (stored at -80)		Binding on reporter cell lines
Elowitz	Glycerol stocks (perhaps several samples for freeze-thaw)		Plate same volume from same prep for each condition
Elowitz	Cell lines (slow freeze) with replicates (4 for each condition)		Thaw and count viability
Murray	Cell lysate		TX/TL assay
Murray	DNA		TX/TL assay
Sternberg	Worms samples		
Mazmanian	Fecal samples		Sequenece
Prober Lab	Competent cells (perhaps several samples for freeze-thaw controls, do one tube no thaws for 6 months, one tube	One tube every 6 month for 6 months and then after 6 more months, one tube at 6 months	Plate on LB and count, could transform

	thaw every month for 6 months)	and one year only, one tube at one year only	
Karethikeyan	Metabolites? DNA/RNA, soil samples, environmental samples? Kept at -70		
Beacon	Kept at -70, different brand than Sterlings		



FALL 2023

GREEN LABS COMPOSTING CHALLENGE

Date: SEPTEMBER – DECEMBER **Who:** CALTECH LABS

Each floor in Chen and the third floor in Broad will compete to turn the most food waste into compost dirt during Fall 2023.

Green Labs will provide a lunch party for the floor that makes the most compost dirt! Second and third prizes will also be provided!



BEFORE → **AFTER**

Download the 30-minute Green Labs Certification Form today and submit it to sustainability@caltech.edu to get Certified today!

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

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NOV. 30TH

GREEN LABS CERTIFICATION CHALLENGE

Date: FRIDAY, NOVEMBER 30TH

Who: CALTECH LABS

Certified labs will be rewarded with a Certified Green Labs Plaque, and access to exclusive events and swag (including free recycling bins and efficiency signage and stickers).

If your lab is Green Labs Certified by FRIDAY, NOVEMBER 30TH, Green Labs is inviting your lab to have a tasty treat and enter a fun raffle at a top-secret location only given to those most excellent and certified green labs.



Download the Certification Form today!
Event Date: Top-secret
Event Location: Top-secret
All Certified Labs are welcome!

Start your Green Labs Certification today!



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

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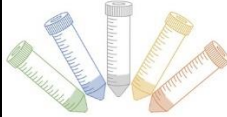
CALL FOR SAMPLES

TO COMPARE -70°C AND -80°C FREEZERS

Dates: August 1 – December 31 (and beyond!)

Who: ANY CALTECH LABS

Green Labs is calling for samples for a student-led study comparing samples held at -20°C, -70°C and -80°C in the Chen Freezer Farm. Samples from various labs will be tested and compared at intervals over a period of up to 5 years.



We hope that by conducting a controlled study at Caltech, we can provide evidence for labs to change their -80°C freezers to -70°C, ensuring an energy savings of up to 30%! Below are some additional resources suggesting that -70°C is a safe storage temperature for many kinds of samples. Use the QR code below to sign up to contribute a sample!



Sign up to contribute samples here. All labs are welcome to contribute samples for our long-term study!



Want to make your lab sustainable? Check out our [website](#) or download the Green Labs Certification Form!



Here are some resources suggesting that -70°C is a safe storage temperature for many kinds of samples!

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JAN - APRIL

LAB SPRING CLEAN COMPETITION

Competition: **JANUARY - APRIL**

Lunch Party: **MAY 1**

Who: **CALTECH LABS**

Participants will compete to clean their labs top to bottom by cleaning out freezers, organizing storage spaces, and taking inventory of lab supplies!



Each participating lab will provide pictures of their cleanup by **midnight APRIL 31ST**. Prizes will be given for the biggest before and after difference, and for the "weirdest thing found".

The day after the competition ends, Green Labs is inviting all participating labs to have a sustainable lunch on us!



RSVP your lab by Sept. 15!
All Labs are welcome!



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



Download the Certification Form today!

Sustainably printed on 100% recycled paper!



SPRING 2023

LAB SPRING CLEAN COMPETITION

Competition: **JANUARY - APRIL**

Lunch Party: **MAY 1**

Who: **CALTECH LABS**

Participants will compete to clean their labs top to bottom by cleaning out freezers, organizing storage spaces, and taking inventory of lab supplies!



Each participating lab will provide pictures of their cleanup by **midnight APRIL 31ST**. Prizes will be given for the biggest before and after difference, and for the "weirdest thing found".

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Download the Certification Form today!

Sustainably printed on 100% recycled paper!

STYROFOAM RECYCLING GUIDE

Follow EH&S Guidelines for biohazardous, radioactive, chemical, and electronic waste

ONLY CLEAN, WHITE #6 EPS FOAM



PLEASE DO NOT INCLUDE:



Check out the Green Labs website for more tips and tricks to make your lab more sustainable!



Sustainably printed on 100% recycled paper!

