

230512 Meeting Minutes

Attendees: Grace Shin, Chandrika Konwar, Honami Tanaka, Yvette Garcia-Flores, Eva Kerckmar, Hongyi Pu, Ben Bekey, Ping Dong, Brianna Garcia, Amina Kinkhabwala, Marina Lecoeuche, Ben Ben, James Linton, Tasha Cammidge, Sarah Torres

Lunch from [Veggie Grill!](#)

Introductions ...

Green Labs Monthly Tip: Act Label

- My Green Lab has developed an [ACT Label](#) that many suppliers have adopted, including Thermo and Agilent. This label gives the environmental impact factor incorporating manufacturing of the product and packaging, energy and water consumption, and product's end-of-life status. This tool allows you to compare different products' environmental impact, with the lowest score being the most eco-friendly.
- Other great resources for sustainable procurement include [Lab Conscious](#) and [i2sl](#).

Updates!

- [Green Labs was highlighted by Caltech Weekly](#) on our efforts!! Good work GL!
- Welcome to a new Certified Green Labs
 - Voorhees Lab!
 - Elowitz Lab!
 - Mazmanian Lab!
 - Berkeley Lights Beacon Instrument Facility!
 - Green Labs is throwing an event with sweet treats for all labs that are certified by April 22nd (Earth Day!)
 - Get CERTIFIED TODAY!
 - What would folks like to do for this event, when would you like it held?
 - Folks like the popsicles, could hold it in Chen
 - We want to do another push in October for Halloween
- Samples:
 - Polycarbin tips
 - Biobased tubes from Eppendorf
 - Do people like them? Feedback?
 - GS: suggested we could also get samples of reusable reservoirs from USA Sci, you keep the base and replace only the reservoir part, it is recyclable, Trinity is able to give bulk pricing, called the [Channel Mate](#)
- Green Labs Hosting Lightning Talks
 - Partnered with Genesee
 - Food from Cake Monkey
 - Drinks from Caltech Catering utilizing their zero-waste option
 - Event was a HUGE success!
 - Special thanks to our speakers and volunteers!
 - Raffle winner: Ping Dong!

- Topics covered: (and do folks want to discuss anything?)
 - Marina Lecoeuche – Prober Lab – Lomi
 - Justin Isaac – Genesee – Sustainable Genesee Products
 - Brianna Garcia – Prober Lab – Sustainable Events and Restaurant Guide
 - Chandrika Konwar – Sternberg Lab - University of Delhi Green Labs Initiatives
 - Kate Malecek – Beacon Center for Single Cell Biology – Pipette Tip Washing
 - Tasha Cammidge – Prober Lab – Fish IVF
 - James Linton – Elowitz Lab – Lab Electricity Usage
 - Manisha Kapasiawala - ULT Freezers
 - Vera Beilinston – McFall-Ngai Lab – Current and Future Lab Sustainability Goals
 - Sarah Torres – Sternberg Lab – Sustainable Office Supply Purchasing

Action Plan

- Start putting names on projects
- Added a sign-up sheet to the Drive for people to sign up as well!
- Are other projects folks want to take on that are not in our action plan?
- Pilot Programs
 - Pilot programs
 - Especially editing and testing submission forms
 - Creating a “mock” submission as an example? – Lomi? Pipette tip box recycling?
 - Coordinating submissions, coordinating with faculty sponsors
 - Reaching out to faculty sponsors and ensuring they have time to read submissions
 - Make into small writeup/progress report/posters or similar format
 - Another event in November? Posters? Talk?
 - No opinion, talk seems easiest
 - From Lightning Event (NOT an exhaustive list!)
 - Recycling Points – started (update today)
 - Lomi Composters – started (update next time, today if time)
 - Sustainable food and event options – started (update today)
 - Lab assessments – started (discuss today)
 - Genova tip washers – started (investigating and getting quotes)
 - Genesee biodegradable glove study?
 - -70/-80 comparison?
 - Towel usage?
 - Autoclavable glass serological pipettes?
 - Others?
 - RocketBooks or other swag
 - Recycling Points Pilot
 - Recycling points – VK
 - Styrofoam recycling points – we need to figure out if we can even recycle Styrofoam here
 - Ice pack recycling

- GS: suggested that we could set up these recycling points for shipping, including Styrofoam, near mail rooms!! – TC will reach out to GS to organize, could also include Manny/Andreas/Jesse/DW
 - TC says ST and TC will meet with DW and will bring it up then
 - ST: could be a shelf in Chen or Broad near mail boxes in the “indent” area
- JL: could also do outreach to vendors to see if they are willing to consider alternatives to Styrofoam like Thermo and NEB
- TC: could also ask if they are interested in return programs (they provide shipping label)
- GS: purchasing could help with this
- ST: FT GL employee could also help with this
- CR: see if stockrooms might accept the Styrofoam also
- Pipette box recycling points – VK
 - USA Scientific
 - GS: Not well disseminated, email Joan for help sending out information so it doesn’t take so long
 - Put out boxes near mail rooms or near auditoriums in BI, Broad, Braun, Chen, Alles
 - Created signage and maps
 - CR: asked if signage could be made available (TC says it is on the website if she wants to print it)
 - Emailed lab managers, so hopefully folks saw the emails
 - Trinity has agreed to pick up the full boxes, we have organized that these 5 points have backup boxes for when the originals are full, and GL will swap them out and either others or we will let Trinity know they are full
 - Trinity is redistributing them to labs in need, or recycling them within USA Scientific for other purposes or sending to a recycling plant near their HQ
 - Created signage and maps
 - Recycling bin signage – TC (on bottom of page)
 - Want to make printer signage for eco-friendly printer usage
 - Recycling bins inside labs (so including petri dishes, excluding kimwipes etc) – this may be a collaboration with EHS
 - Adjusted as per EHS to have ewaste as a “recyclable category”
 - Added in “can be recycled here” check boxes to make them more customizable
 - Removed tips for now since vendor does not accept them

- Recycling bins in the hallways of BBE to indicate how to recycle properly
 - This would be a collaboration with Facilities
 -
 - Genesee
 - Rainin – Leah from Elowitz lab
 - GS: Other brands could be considered including Biotics which was bought by Rainin, see if other labs are interested
- Welcome Guide
 - Develop the Newcomer Welcome Guide, Welcome Package, and Survey Thank-yous
 - Related to GL Certification form, could tie in information in the Guides, help organize swag and distribute etc, includes signage discussed below
 - Outlet timers? Other GL swag
 - Update GL Certification form with links, tips etc
 - Some universities have a Certification Badge/Certificate for students? Could incorporate into (optional) safety trainings?
 - Yearly re-certification – add a sticker to your plaque? Other incentives?
 - Chemical and equipment share program/email
 - GS: Could have it be more like the summary email Marketplace gives, like once a month, or could utilize Monica for slack or email?
 - ST/ML: so many slacks
 - Survey for Lab Managers
- Events/Meeting and Restaurant Guides
 - Events/Meeting Guide
 - Working with Brianna (who has started the Restaurant Guide)
 - This project would involve collecting resources for sustainable or zero-waste events
 - You may also want to collaborate with Brianna Garcia (see below), who is putting together the Sustainable Restaurant Guide
 - Help do the write-up
 - Restaurant Guide – BG finished, nearly ready for website, at bottom of pages
 - Gathering sustainable restaurants and putting them into a few documents (breakfast, lunch, dinner, that kind of thing)
 - We would LIKE to call each of the vendors she has found and see if they would be willing to give us a discount (10%?) for promoting them on GL
 - ST: are labs willing to eat from sustainable options?
 - YG: YES, if it is free they don't care
 - CR: could also include link for discounts or codes
 - CR: could also include information about if it is easy to order from or not
 - GS: you can get 10% off at Panda with your Caltech ID

- PD: also at Sai Sai (BG suggests this restaurant is not on the list but she will look into if it is sustainable too!)
 - CK: Add section about how to judge sustainability
 - Grace: merch to who finds a new sustainable restaurant
 - ST: coffee and breakfast additions in the future
 - AK- could also compile a list of gifts/swag that is green
 - Various: stationary, customized rocketbooks, gift certificates, badge holders?, hand sanitizers, coffee tumblers that are low and wide, espresso cups, camping mug, recycled coasters etc (CK), stuffies, bandana for hiking, earthen cups
 - AK: list of vendors, green swag, AK and ML volunteer?
- Purchasing Guide (example at bottom)
 - Purchasing Guide including links/QR codes
 - Living document on our website or links on our website?
 - Folks indicated a living document could be useful
 - GS: Could have a suggestion board for people to add comments
 - TC: not sure how to do that (ST thinks she does)
- Sustainable projects with kids - AK
 - Sustainable, fun projects to do with kids – AK?
 - Sock mammoth
 - Regrow vegetables from scraps
 - Sustainable projects or art
 - Plant share program or garden tower – WC
 - Make labs “greener” 😊
 - These are both “off-topic” but might be fun, AK no longer able to do this project as she is having a child, but may pick it up in the future
- Energy Assessment – JL?
 - Tool for assessing how much energy your lab uses based on the equipment you have
 - Assess where your lab is “spending” energy, to inform decisions on how to manage usage
 - JL: working on making it “easy”, he is thinking about it and seeing what he can do to make it not such a burden and accessible for labs
- Water assessments (JL, JE?)
- Inventories
 - -80 freezers
 - Autoclaves
 - Fume Hoods
 - Coordinating volunteers to help with this, talking with lab managers or Jesse etc
 - Making spreadsheet and taking inventory in BBE
 - Standardized signage (for scheduling runs etc)

- Talk with lab managers about scheduling fewer loads a week or collaborating with nearby labs to reduce runs etc
- Making a map
- Suggest empty or unused equipment be turned off (eg fume hoods)
- Encouraging participation in the freezer challenge
- Resources
 - Freezer cleanout signage
 - “Stickers” or signs that promote the freezer challenge or participation in GL freezer stuff
 - “5 ways tips and tricks for keeping a green freezer” signage
 - A simple laminated sign (magnet?) that can be updated when the last cleanout was done or something like that
 - GS: in her lab cleanout once a year, one day, and dinner as reward
 - ST: GL could sponsor spring cleaning
 - GS: not one month to do it, all in a one day push, first time is hard but after is easier, janitorial will bring dumpsters to front of building
 - CK: spring cleaning carnival/festival in India, is there options/holidays here that are similar?
 - TC: perhaps just “spring cleaning” sometime in April??
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 - Signage for equipment – Sami/TC
 - Used TechHub Cricut!
 - Will print stickers to give out in welcome packages etc
 - Stickers – should labs pay for the paper? If labs are certified they could be free?’
 - Ethanol/water test
 - \$12/30 sheets-\$16/12 sheets
 - 2” stickers – 12/page
 - 1.5” stickers – 24/page
 - 1” stickers – 63/page
 - Sticker mule
 - \$72/10 sheets
 - AK: list of equipment for the group? TC: it is up to the lab to decide which equipment can be turned off or not at all, but GL could provide suggestions?
 - YG/JL: they have found that just by them turning off machines, colleagues when they go to use it, if the machine is off people will turn it off at end of use, having point person to do this (and perhaps the stickers could work for that) is best
- Freezer Challenge
 - **WHAT:** The International Institute for Sustainable Laboratories (I2SL) and My Green Lab are partnering for the seventh year in a row to coordinate the

International Laboratory Freezer Challenge. Designed to promote best practices in cold storage management for laboratories around the world, the Freezer Challenge harnesses a spirit of competition to achieve greater energy efficiency, sample integrity, and sample access.

- **WHO:** All laboratories from all sectors that have cold storage.
- **WHEN:** January 1 to July 1, 2023. Scoresheets will be accessible starting January 1. You can count any actions you've taken from August 1, 2022 to July 1, 2023 on your scoresheet for points.
- **REGISTER:** At www.freezerchallenge.org
- **COST:** It's free upon online registration AND you get to come to Green Lab's popsicle party after the event!
- Green Chemistry
 - Incorporating green chemistry or other topics into curriculum for grad students
 - Cost effective
 - Easy for profs to adopt
 - Grad students get professional development, they can make slides or adjust slides or curriculum, teach a class
 - Reaching out to GSA?
 - CLTO workshops?
 - Victoria Orphan or other profs interested in sustainability?
 - Working with Pamela Bjorkman for the graduate course where you design your own curriculum and train other grad students?
 - Surveying students for interest
- Green Labs 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!
- Update on Lomi Composter Project
 - One in each Chen kitchen
 - Sarah, Yvette, and myself watching/running them
 - Collaborating with Caltech Gardens
 - They are taking our soil/compost for the grounds!
 - Energy efficient
 - Use 0.6 – 1 kWh of electricity per run (~\$0.15 per use)
 - Rest of the time it can sit unplugged, so no power used on lights etc
 - Can compost about 30% of what we dispose of in kitchen waste, doesn't smell, doesn't leak
 - What we have learned so far
 - Removable stickers so folks don't fill the Lomi while it is running
 - Advertise more? Add signage to fridges or other garbage cans, make more flashy
 - Running 3rd and B1 levels ~2x a week, running 2nd floor ~1x a day

- Generating about 6-8 gallons total per month?
- May need to move B1 and 3rd floor ones to be closer to garbages
 - Types of food waste change consistency (moist waste needs longer cycle)
- Continuing work
 - Coordinate with Gardens/Dining center to incorporate compost (pickup ~1x per month)
 - CR: could add a bar indicating progress, and how much food has been diverted and turned into compost
- -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?

For next time

- Photos!
- Work on Action Plan
- Slack?
- Anything Else?

Next Meeting June 9th 12pm Chen 240
Bring a friend and get a RocketBook!

LAB RECYCLING GUIDE

Please separate recycling and follow EH&S Guidelines for biohazardous, radioactive, chemical, and electronic waste

Recycle here:



Triple-rinse your bottles, collect rinsate as hazardous waste, deface/remove the label.
No broken glass, glass pipette tips, or pyrex glass.

Glass Bottles Plastic Bottles



Petri dishes Weigh boats Centrifuge tubes Pipette tip wafers
Reservoirs Conical tubes Pipette tip boxes (NO PIPETTE TIPS)



Flattened cardboard and cartons Packing materials Paper envelopes, and magazines Aluminum/tin cans, scrap metal
No Kimwipes, PCR plate seals or seal paper, paper towel, or pipette tips.

Not Recyclable:



Biohazardous or radioactive materials or sharps PCR plate seals, plastic baggies, gloves, pipette tips Kimwipes or paper towel Pyrex glass

Electronic Waste



Electronic waste is recycled at e-waste recycling points



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



RECYCLING GUIDE

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

Recycle here:

Other Recyclables: Unsure? Recycle here if clean!



Aluminum / tin cans, scrap metal Recyclable plastics Recyclable glass

Bottles and Cans: Cash Redemption Value Only



Glass Aluminum / tin cans Plastic

Mixed Paper: Flattened and empty



Flattened cardboard and cartons Packing materials Paper, envelopes, and magazines

Not Recyclable:



Biohazardous or radioactive materials or sharps PCR plate seals, plastic baggies, gloves, pipette tips Kimwipes or paper towel Pyrex glass

Electronic Waste



Electronic waste is recycled at e-waste recycling points



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





Sustainable Restaurants Resource List

Please list sustainable/vegetarian/ethical restaurants to be used for lunch during our meetings, as well as a resource for the Green Labs website!

Lunch + Dinner Restaurants

1. Veggie Grill



Located on Lake Ave

Veggie Grill is one of the largest 100% plant-based restaurants in the nation. Their plant-based mission came from the knowledge of inhumane methods used in factory farming in the meat and dairy industry. They aim to introduce more plant-based foods to the community and bring awareness about the health benefits of a plant-based diet.

2. Lemonade



Located in The Commons

Lemonade has a diverse and colorful menu containing ingredients that are all sourced from California and change based on the season.

3. Urban Plates



Located on Lake Ave

Genesee Biodegradable Gloves



*ask Parker for discount!



Boise 100% Recycled Copy Paper

Post-it Greener Notes



Second Nature Notepads

PolyCarbin



RocketBook

Green Labs Website



Green Labs Certification

Green Labs Meetings



Green Labs Manager Survey