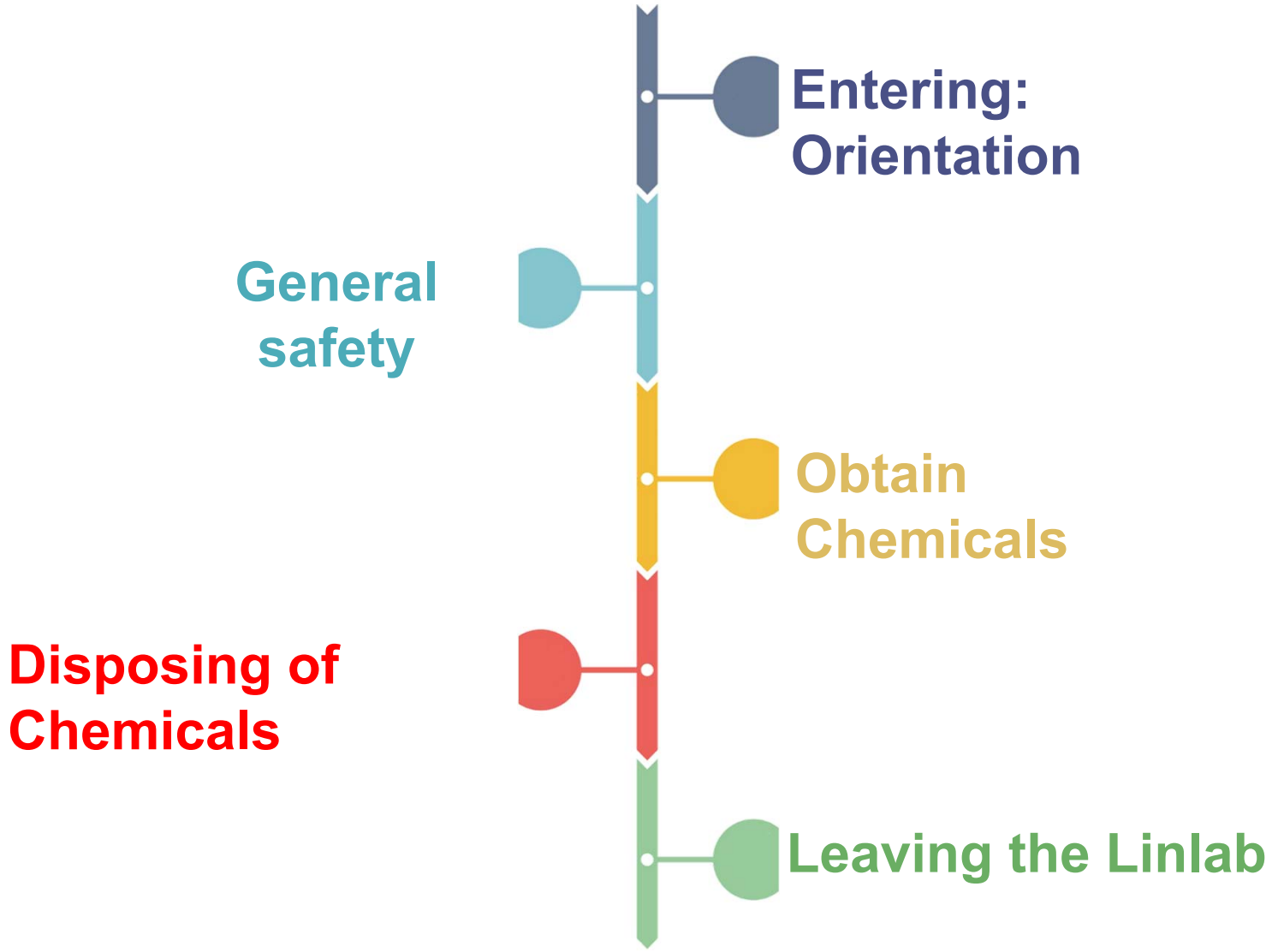
Linlab Safety 2017

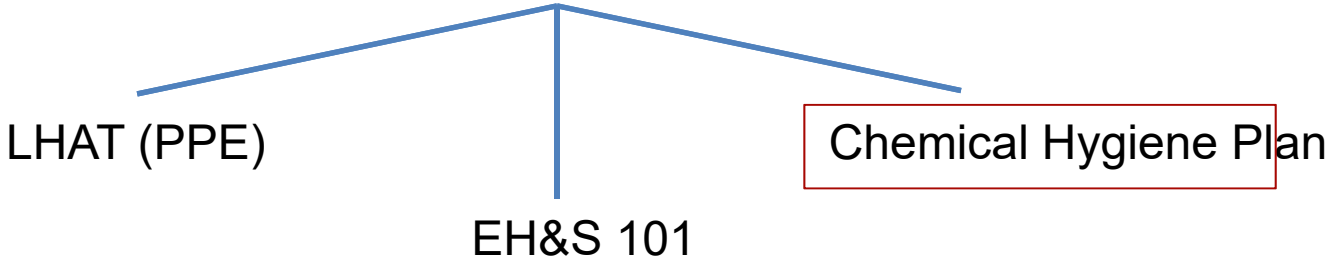
Prepared April 6, 2017

Being a safe Linlab Member

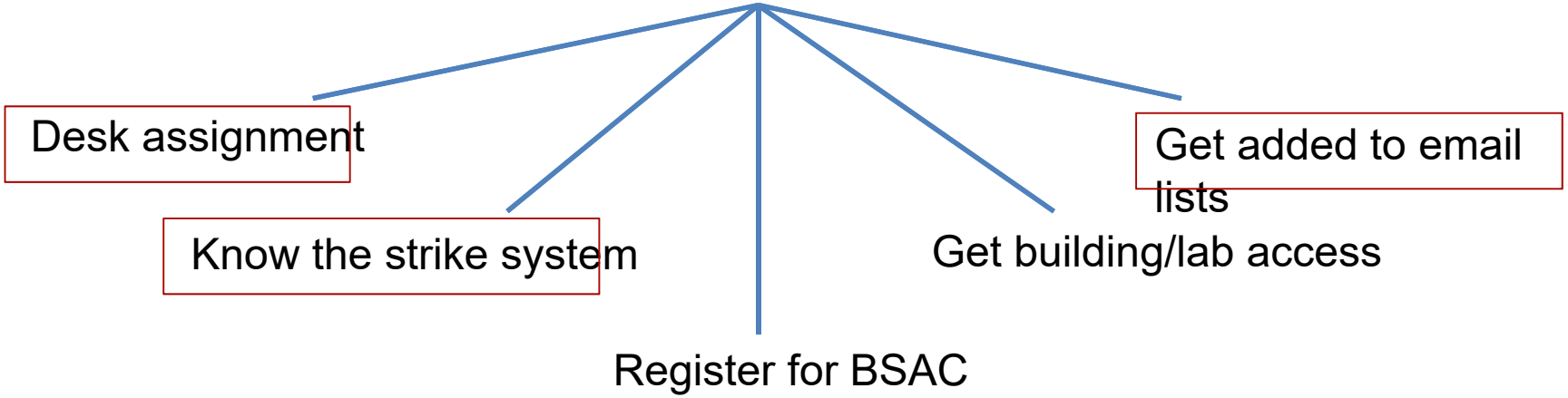


Entering: Orientation

Safety Trainings



Linlab Specifics



All material included in the “Orientation checklist”

Strike System

Melting things in our oven (2), ake responsibility (1)

Not putting a chemical into inventory

Not completing required training

Disposing of waste improperly

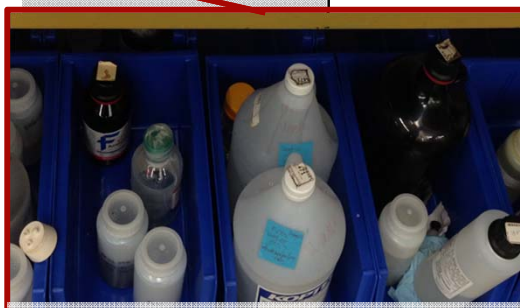
Not attending lab clean-ups (random attendance

Using dangerous chemicals without signing SOP

Disregarding SOP instructions

Strike out twice, and you must retake EH&S 101

Acids, Bases, Oxidizers, Toxics

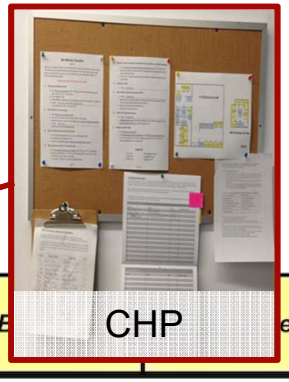


Hazardous Waste

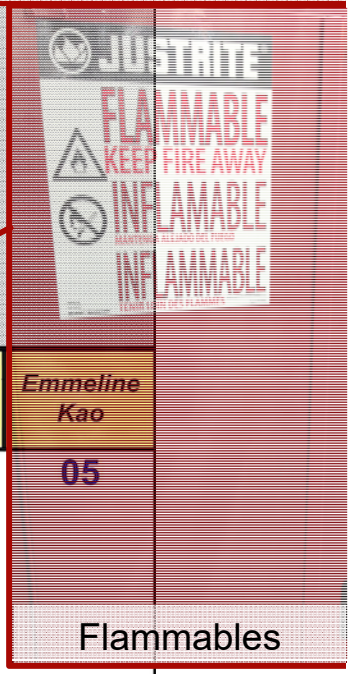
Non-Toxics

Eye Wash

Spill Kit



CHP



Flammables

Yue

11

Ken Saito

Public desk

16

Xinrui Ding

12

15

Public desk

14

13

Public desk

20

Dong-woo Shin

Yu-meng Liu

18

21

Min-song Wei

Caiwei Shen

19

22

Yong

Public PC-2

Public PC-3

Public PC-4

Renxiao Xu

06

Emmeline Kao

05

Public PC-1

03

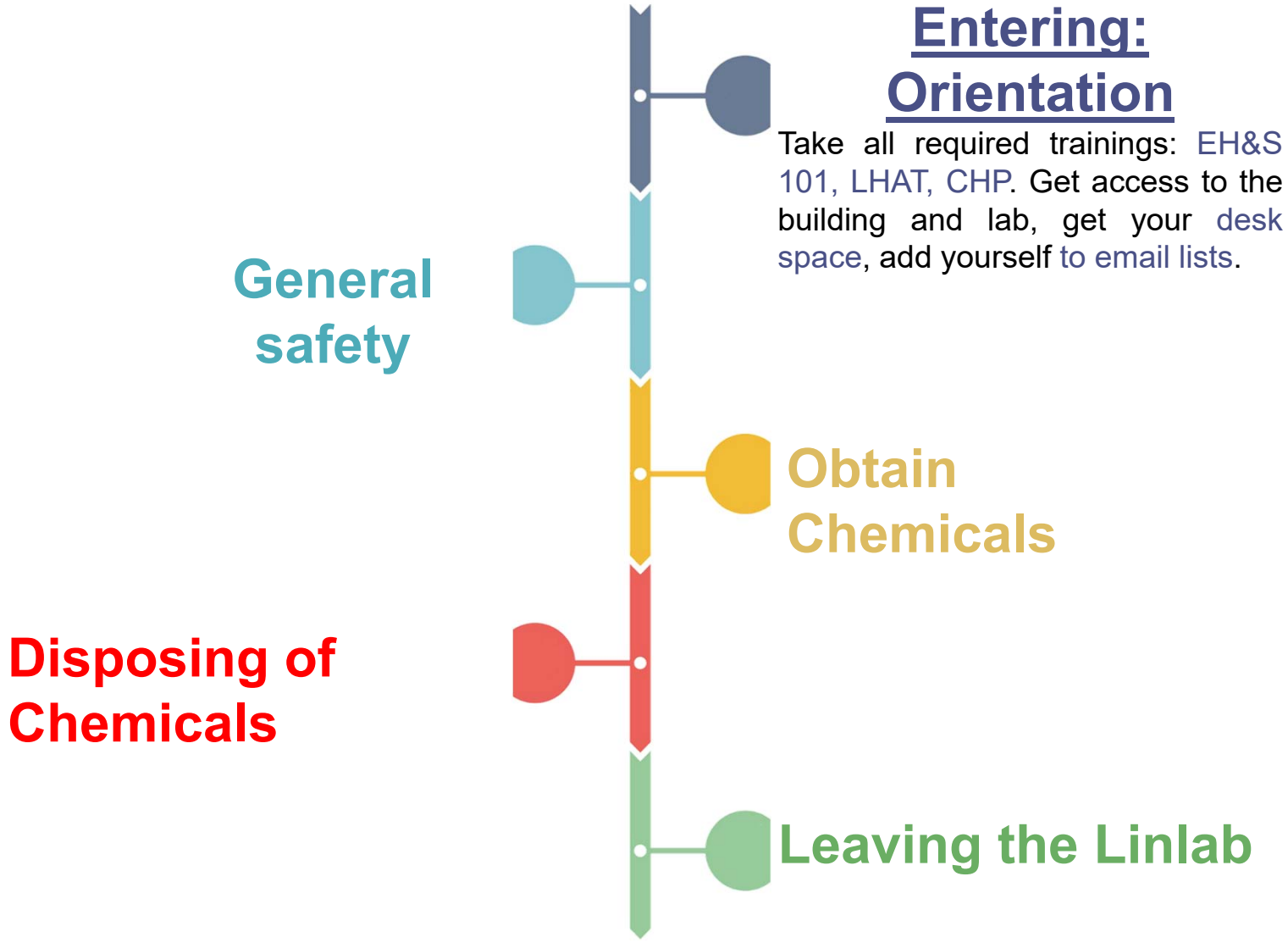
Jin Woo Bae

04

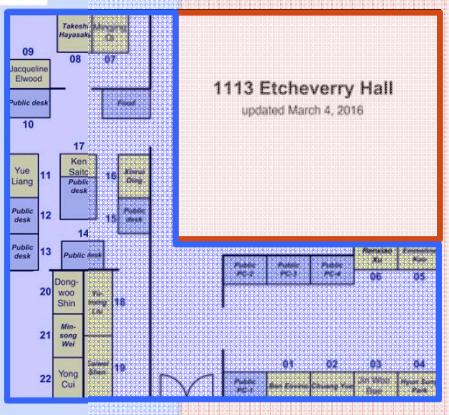
Hyun Sung Park

Fire alarm pull stations

Being a safe Linlab Member



Office Area



Lab Area

goggles (when needed)

Lab coat

gloves

Covered legs

Close-toed shoes

ways to keep a shared space clean and to do less on lab clean-up day (biweekly Fridays)

Spend an extra 5 minutes cleaning after your experiments are done.

Never pipette directly out of a shared bottle

Store your samples in an enclosed space.

Never out in the open

Put chemicals back where you found them

Keep workspace free of clutter

Label ALL samples and working solutions

- Name/email address
- Contents
  - Even if it is just DI water
- Whatever is unlabeled will be disposed of at biweekly cleanings

"Don't worry. I know exactly where all the dangerous unlabeled bottles are."

Find training for the equipment you need to use in the Linlab:

Equipment	Super users
Furnace (and vacuum set up)	Xining, Emmeline, Caiwei
Sonicator	Caiwei
Compressed gas cylinders	Xining, Emmeline
Gamry (and Xenon lamp set up)	Xining, Emmeline, Caiwei
Electrospinner (and electrospraying)	Hyun Sung
Electrical Measurement Equipment	Ben, Junwen
Semiconductor Analyzer	Takeshi and Simon
Spin Coater	Simon
Hazardous Chemicals	Emmeline
High voltage power source	Junwen

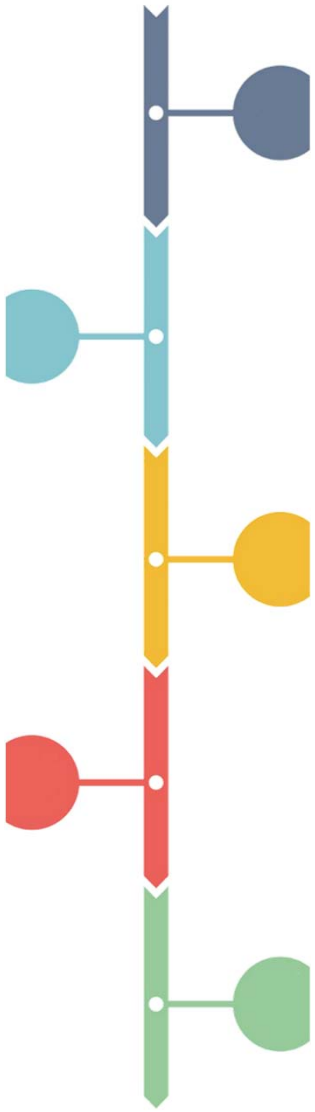
Being a safe Linlab Member

Entering: Orientation

Take all required trainings: EH&S 101, LHAT, CHP. Get access to the building and lab, get your desk space, add yourself to email lists.

General safety

Get trained on equipment in the Lab: furnace, gamry, sonicator, etc. Clean up after yourself when you are done with your workspace. Attend lab clean-ups.



Obtain Chemicals

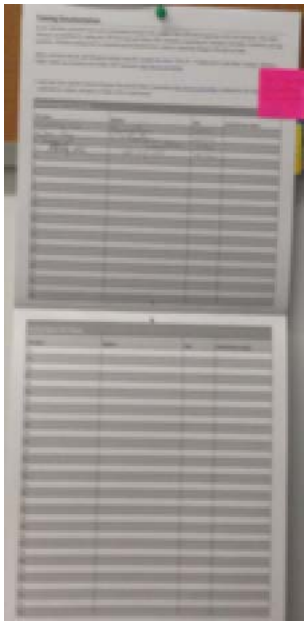
Disposing of Chemicals

Leaving the Linlab

Step 0: trainings

In order to use chemicals and obtain chemicals, you must have…

Signed CHP Training



Signed SOPS

Passed Hazardous Waste Training

HAZARDOUS WASTE

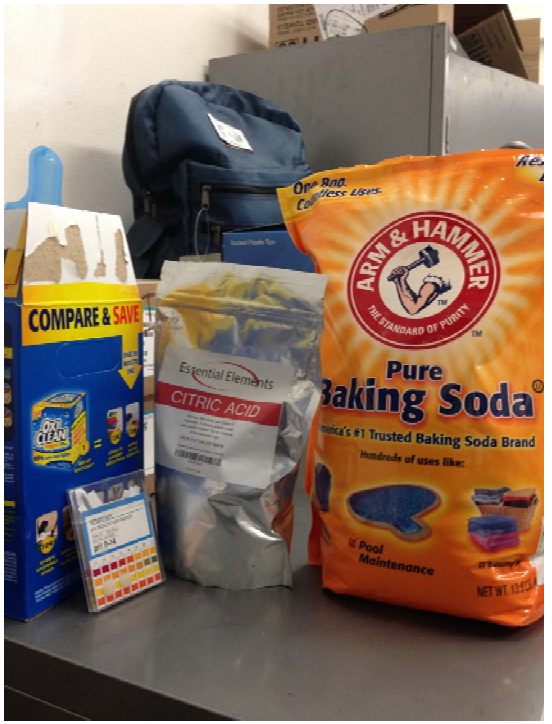
UC Berkeley (510) 642-3073 Etcheverry and Soda Hall Berkeley, CA 94720 Bernard Alfred Etcheverry Hall 1113	
Trk#: 268356	Accumulation Start Date: 01/31/2017
Generator: LIN, Liwei	Request Pickup By: 07/15/2017
Created By: Hayasaka, Takeshi	CAA Start Date: (For EH&S Use Only)
Physical State: LIQUID	
Comments:	

Item Description	Amount
Potassium hydroxide, solution	150.0mL

Hazardous Properties: **Total** 0.15 L

CORROSIVE BASE

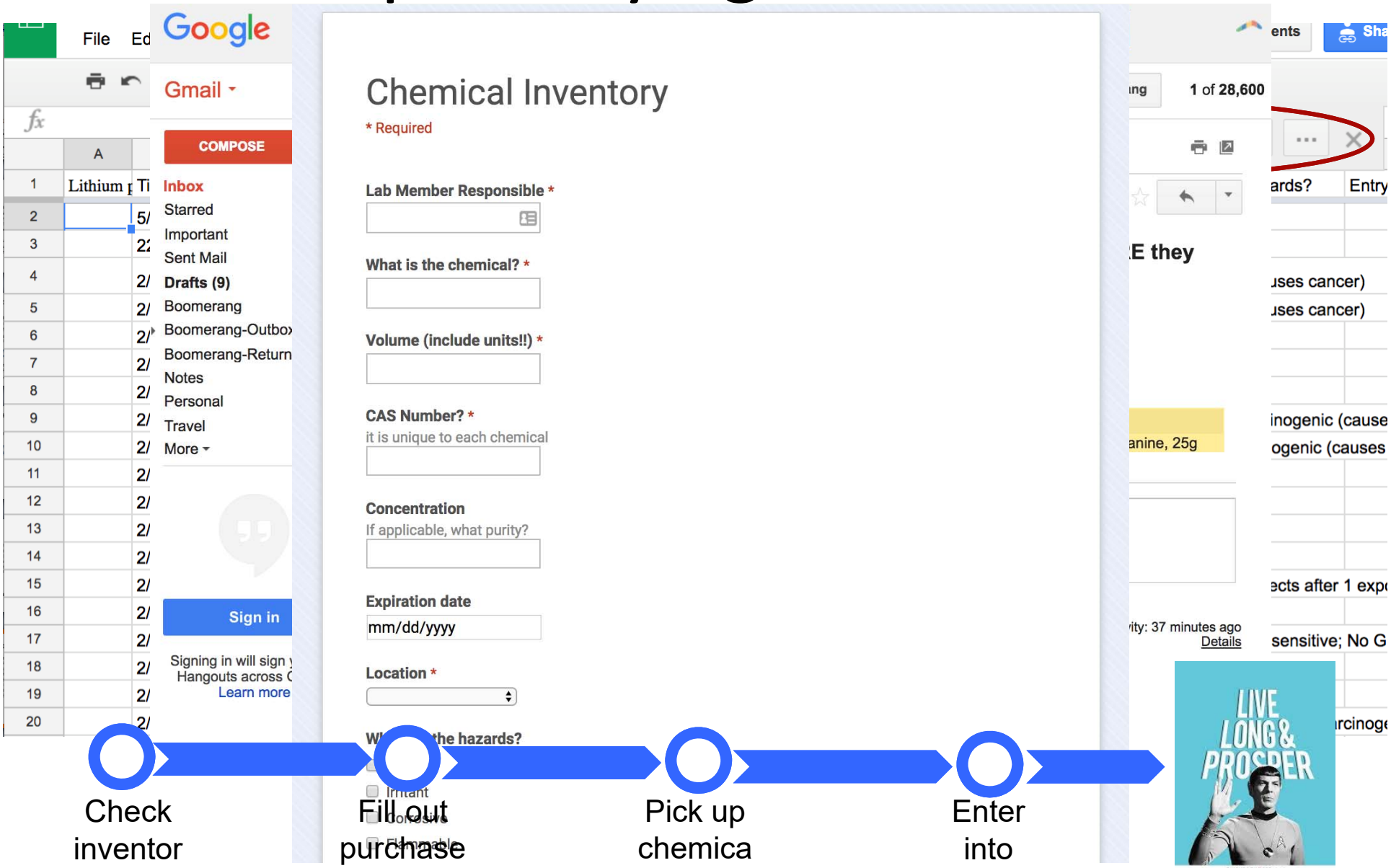
Passed Spill Response



"Let's review the guidelines
for some of the chemicals we handle."

SOP category	GHS codes	Fume hood	Extra protection	Examples in our lab
Regulated Carcinogens	H350 H351	Yes*	Yes	Tetrahydrofuran, Hydrazine monohydrate, 2-methylimidazole, Carbon Nanotubes
Flammables	H225 H226 H227 H228 H220		Yes*	Acetone, Acetonitrile, Ferrocene, compressed H_2
Strong Oxidizers	H271 H272		Yes	Zinc Nitrate Hexahydrate, Lithium Perchlorate
O_2^{2-} Forming Chemicals	PFC			Benzyl ether, Acrylic acid, 2-Methoxyethaniol
Reproductive Toxins	H360 H361 H340 H341		Yes	2-methylimidazole, Chromium(IV) Oxide, Tin (III) chloride dihydrate
H_2O Reactive	H260	Yes*	Yes	Sodium Borohydride, Lithium
Acutely Toxic	H300 H301 H330 H331	H330	Yes*	Chloroform, Formic acid, Hydrochloric acid, Lithium

Step 1: Buying chemicals

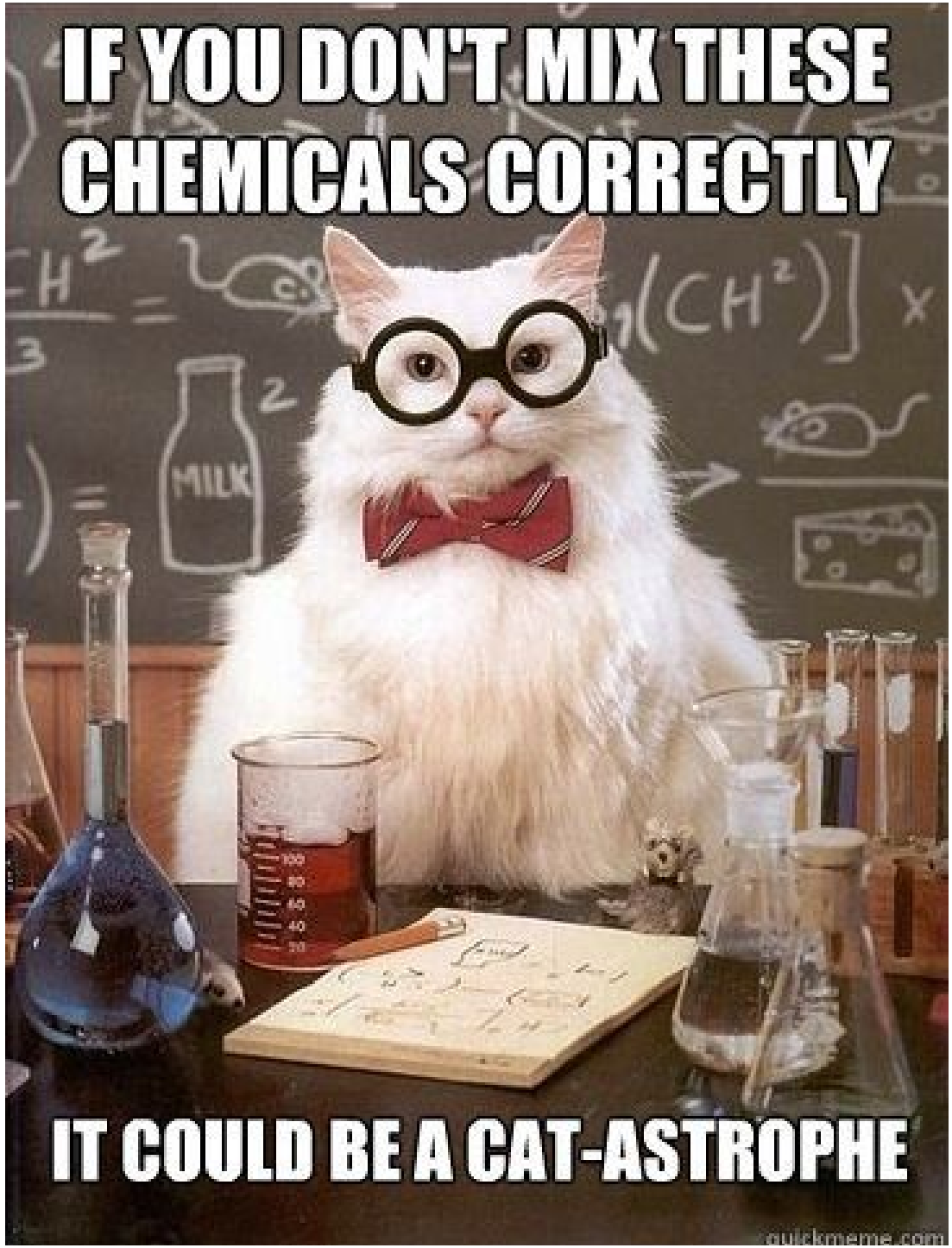


Step 2: storing chemicals

1. When a chemical enters 1113 Etch, fill out the Linlab chemical inventory form
   - You must do this BEFORE storing the chemical in lab
   - If storing in BNC or nanolab, follow their protocols
2. Label the chemical with a green sticker
3. Label the chemical with your name on a yellow sticker, if you would like to use it exclusively

Always add green when inventoried

Optional: write your name on yellow stickers if you want to use exclusively


IF YOU DON'T MIX THESE CHEMICALS CORRECTLY
MILK
IT COULD BE A CAT-ASTROPHE
quickmeme.com

Being a safe Linlab Member

Entering: Orientation

Take all required trainings: EH&S 101, LHAT, CHP. Get access to the building and lab, get your desk space, add yourself to email lists.

General safety

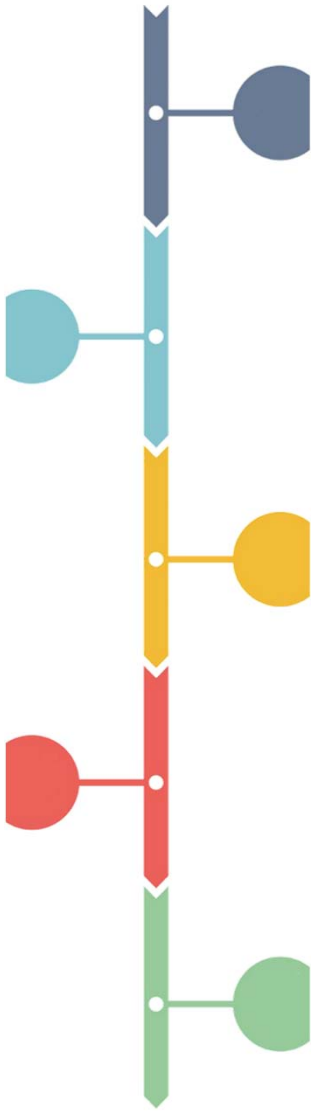
Get trained on equipment in the Lab: furnace, gamry, sonicator, etc. Clean up after yourself when you are done with your workspace. Attend lab clean-ups

Using Chemicals

Finish extra training: Hazardous waste, spill training, sign the necessary SOPs. Fill out purchase request to buy a chemical. Enter it into the inventory and label it if you are storing it in the Linlab.

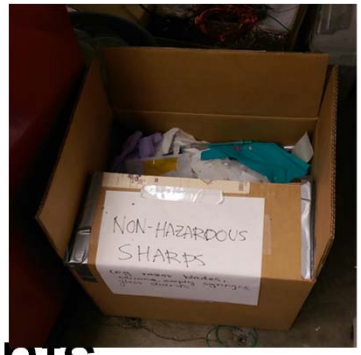
Disposing of Chemicals

Leaving the Linlab



Where to dispose of things in the lab

1. Trash can
2. Recycling Bin (outside Linlab or next to back exit)
3. Non-hazardous sharps (under M3B table)
4. Hazardous sharps (under M3B table)
5. Bulk waste (be sure to update the label)
   - Halogenated organic solvents
   - Non-halogenated organic solvents
6. Hazardous general waste



Disposing of things in the lab: hazardous waste

Is it sharp?

no

yes

Can it go in the trash can?
(would you put it in your trash at home?)

Does it contain hazardous chemicals?

no

yes

no

yes

Does it contain mostly organic solvent?
(no significant trace material)

no

yes

Is it halogenated?

no

Add to <u>non-halogenated</u> organic

yes

Add to <u>halogenated</u> organic bulk and

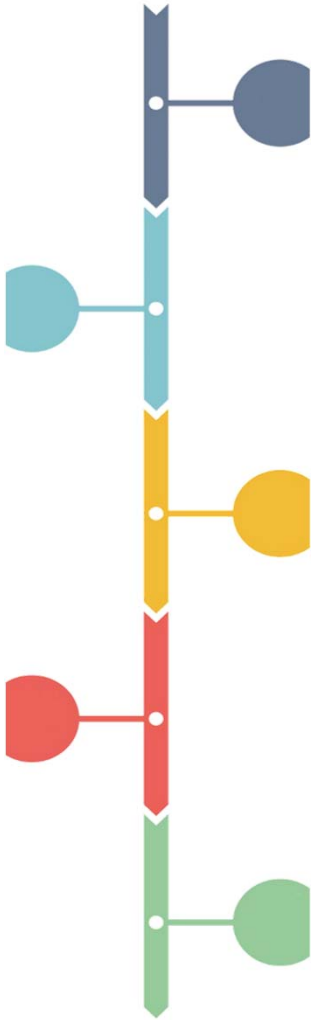
Being a safe Linlab Member

General safety

Get trained on equipment in the Lab: furnace, Gamry, sonicator, compressed gasses, etc. Clean up after yourself when you are done with your workspace. Attend lab clean-ups.

Disposing of Chemicals

Follow rules when disposing: bulk halogenated organic solvents separately from organic solvents. Fill out the HWP labels. Use sharps bin correctly. When in doubt, always ask.



Entering: Orientation

Take all required trainings: EH&S 101, LHAT, CHP. Get access to the building and lab, get your desk space, add yourself to email lists. Know the strike system.

Using Chemicals

Finish extra training: Hazardous waste, spill training, sign the necessary SOPs. Fill out purchase request to buy a chemical. Enter it into the inventory and label it if you are storing it in the Linlab.

Make sure your things have a place

- Ask someone to be responsible for your remaining things
  - Ask collaborators if they want your chemicals or equipment
  - Dispose of any unwanted chemicals, equipment
  - Take personal supplies home




- If you need an extension on storing things in the lab, get permission from Takeshi or Emmeline

All material included in the "Check-out list"

Being a safe Linlab Member

Entering: Orientation

Take all required trainings: EH&S 101, LHAT, CHP. Get access to the building and lab, get your desk space, add yourself to email lists. Know the strike system.

General safety

Get trained on equipment in the Lab: furnace, Gamry, sonicator, compressed gasses, etc. Clean up after yourself when you are done with your workspace. Attend lab clean-ups.

Using Chemicals

Finish extra training: Hazardous waste, spill training, sign the necessary SOPs. Fill out purchase request to buy a chemical. Enter it into the inventory and label it if you are storing it in the Linlab.

Disposing of Chemicals

Follow rules when disposing: bulk halogenated organic solvents separately from organic solvents. Fill out the HWP labels. Use sharps bin correctly. When in doubt, always ask.

Leaving the Linlab

Ask lab members if they want your excess chemicals, samples, and equipment (tweezers, glassware, etc.). Dispose of anything that is not needed in the lab. Clear out your desk space—don't let us find your pants in a few years!


SEE A HAZARD:
Questions?
REPORT IT