

UTILIZATION OF INVENTORY DATABASE TO SUPPORT EFFICIENT USE OF CAMPUS CHEMICAL RESOURCES

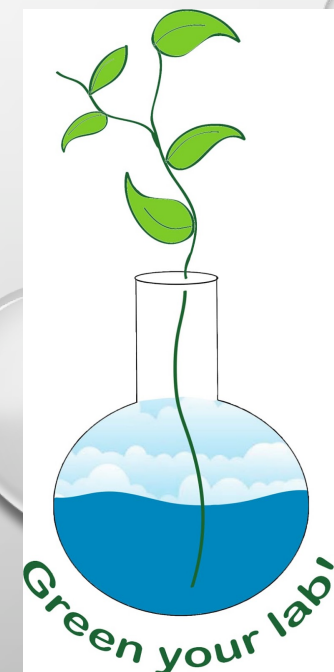
UNIVERSITY OF COLORADO AT BOULDER

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UNIVERSITY OF COLORADO **BOULDER**



LEARNING OBJECTIVES

- How EH&S Department at CU-Boulder is working to implement inventory system with a team of Temporary Employees and Students
- The challenges faced, accomplishments, and impacts that this system is already having on campus
- The potential benefits the system can bring to the researchers once it has been implemented campus-wide

BRIEF HISTORY



Labs were responsible for creating, maintaining and auditing inventories on an annual basis.

- Labs were in charge of managing every aspect of their inventory

Labs were asked to hand count and track every bottle within their inventories using an excel spreadsheet.

- The mechanism and tools provided were tedious and resulted in high error margins.

Resulted in labs not maintaining inventories with accuracy rates of 45% or less.

- This level of accuracy is unacceptable.

NEW PLAN

- Get done faster
- More accurate.
- Cheaper than your average grad/post doc.

EHS will now create new inventories for all labs across campus using students and temporary employees.

1

- Using barcodes provides a level of speed and accuracy not offered in the previous workflow.

Plan to barcode all existing chemicals and create a mechanism to barcode all incoming chemicals moving forward.

2

- Reduces the burden on labs while increasing data accuracy
- Gets the job done faster and cheaper.

As long as labs dispose of used barcodes and ensure that incoming chemicals have a barcode, EHS will audit your labs inventory on an annual basis.

3

NEW PLAN

Work Station



Labels and Bottles



ISSUES/CHALLENGES

Physical Task of Barcoding Campus

Label Tack Level

Freezers

Desiccators

Cold Rooms



ISSUES/CHALLENGES

Choosing what to inventory and what not too

Inventory Everything that has a CAS#

Did not inventory
Buffers, Kits,
Dilutions, Household
items



ISSUES/CHALLENGES

Old Chemical Fallout

Found ALOT of:

Old Chemicals

Degraded Bottles

Lecture
Bottles/cylinders



ISSUES/CHALLENGES

Creating a Culture Change That Sticks

Getting People comfortable with the Inventory Process

Getting People to dispose of barcodes when bottle is considered waste

The image shows two copies of a 'Disposal Sheet for Barcodes from Inventory' form. The forms are from the University of Colorado at Boulder, Department of Environmental Health and Safety. They are filled with barcodes and chemical information.

Left Form:

- Header:** University of Colorado at Boulder, Department of Environmental Health and Safety.
- Title:** Disposal Sheet for Barcodes from Inventory.
- Instructions:** Please remove barcode from chemical bottle in which you would like to dispose and place on this sheet for disposal from your digital chemical inventory. Once sheet is full, please choose one of the following options...
 - Option 1:** Your Lab personnel can login to <https://chemsys.colorado.edu/mylab/> and select the disposal tab along the top navigation bar and enter/scan the barcodes on this sheet for disposal.
 - Option 2:** Mail the form to EHS at UCB 413 "Robert An" and EHS will scan out the barcodes for your lab. Questions, please email Robert.An@Colorado.Edu or Call EHS @ (303)-492-6025.
- Table:** A grid of 40 barcodes arranged in 8 rows and 5 columns. Each barcode is labeled with a chemical name and a date.
- Footer:** Department of Environmental Health and Safety 1000 Regent Drive 413 UCB University of Colorado Boulder, Colorado 80309-0413 303.492.6025 ECH_Barcode Disposal Sheet 02_15.doc 1 of 1 Ran rev02/15

Right Form:

- Header:** University of Colorado at Boulder, Department of Environmental Health and Safety.
- Title:** Disposal Sheet for Barcodes from Inventory.
- Instructions:** Please remove barcode from chemical bottle in which you would like to dispose and place on this sheet for disposal from your digital chemical inventory. Once sheet is full, mail the form to EHS at UCB 413 Attention: "Robert An" and EHS will scan out the barcodes for your lab. Questions, please email Robert.An@Colorado.Edu or Call EHS @ (303)-492-6025.
- Table:** A grid of 20 barcodes arranged in 4 rows and 5 columns. Each barcode is labeled with a chemical name and a date.
- Footer:** Department of Environmental Health and Safety 1000 Regent Drive 413 UCB University of Colorado Boulder, Colorado 80309-0413 303.492.6025 ECH_Barcode Disposal Sheet 02_15.doc 1 of 1 Ran rev02/15

ACCOMPLISHMENTS

July 16 - September 17 (14 months)

74,000+
Chemicals



1,200+
locations



The image features a light gray gradient background. In the top-left and bottom-right corners, there are clusters of realistic water droplets of various sizes, rendered with soft shadows and highlights to give them a three-dimensional appearance. The text is centered in the middle of the frame.

SO, WHAT CAN WE DO
WITH THESE NUMBERS?

CHEMICAL REDISTRIBUTION

LABS

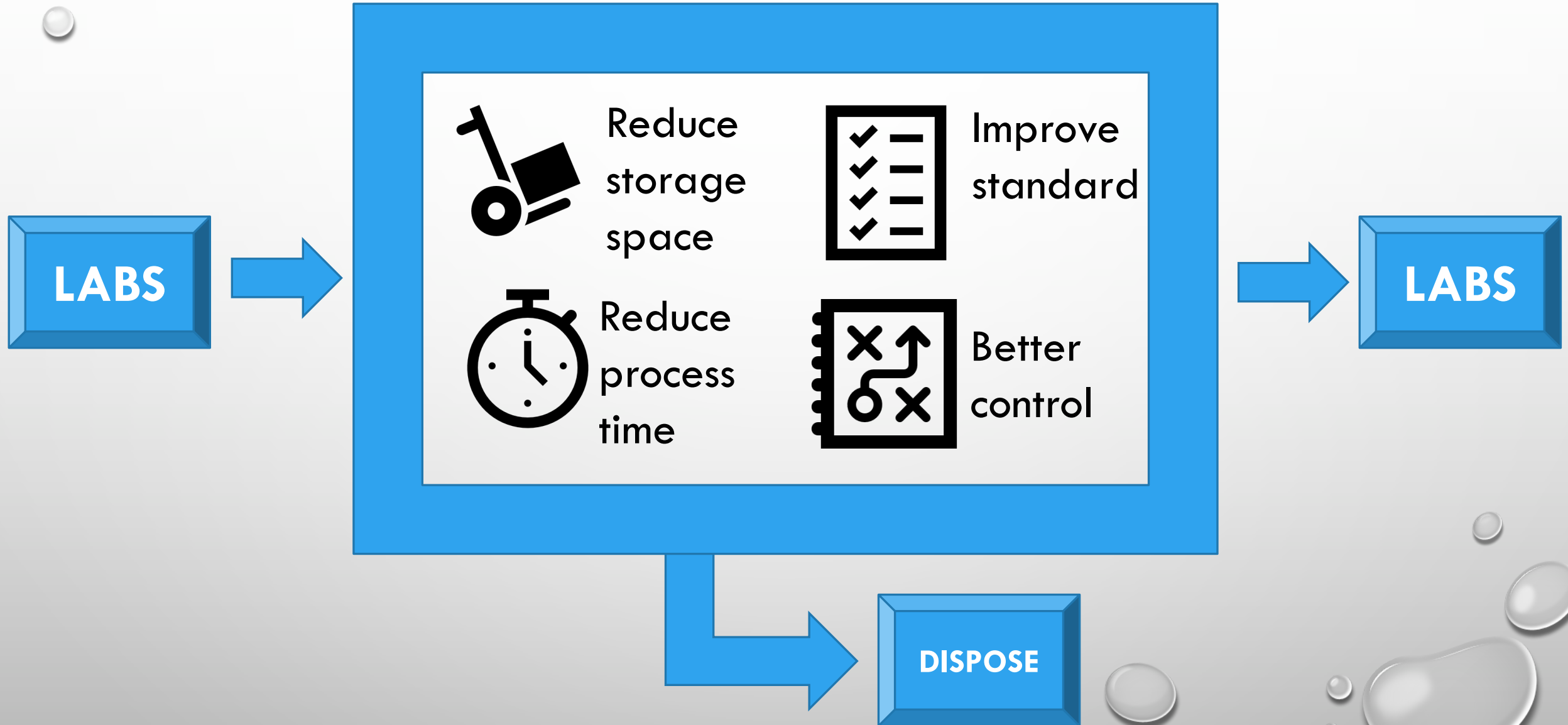


LABS

CHEMICAL REDISTRIBUTION



CHEMICAL REDISTRIBUTION



Current Example:

chemicals: 534

chemicals redistributed:

418 (78.3 %)

leftover chemicals
(disposed): 116



Current Example:

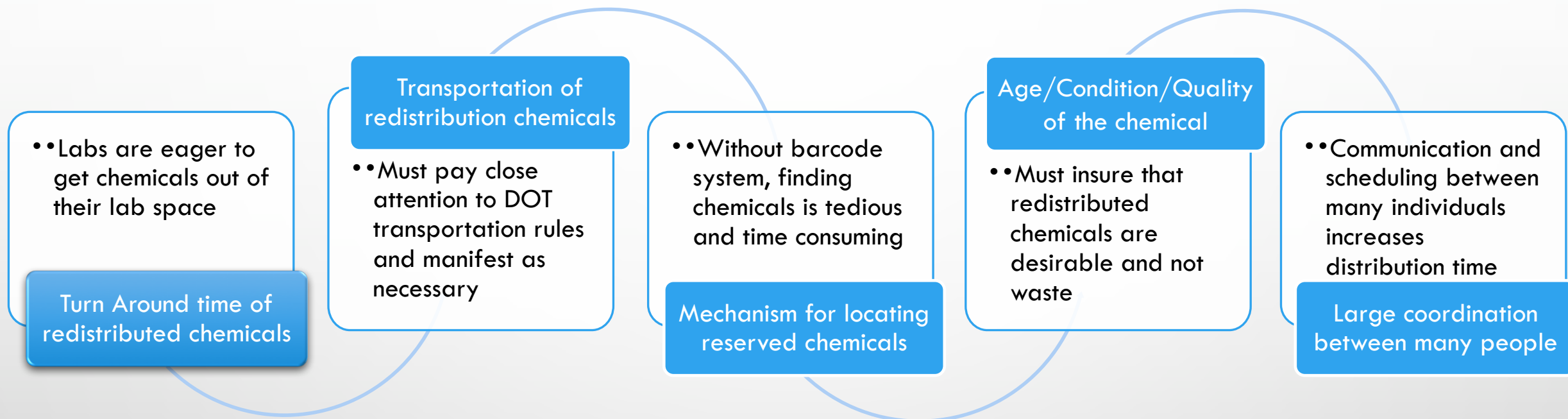
chemicals: 179

chemicals redistributed:
39 (21.7%)

leftover chemicals
(disposed): 140



CHALLENGES/ISSUES



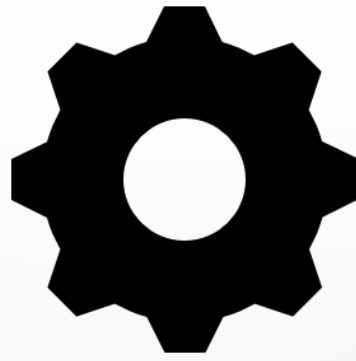
The image features a light gray gradient background. In the top-left corner, there are several realistic water droplets of varying sizes, some overlapping. In the top-right corner, there is one large droplet and one smaller one. In the bottom-right corner, there is a cluster of droplets, including a large one and several smaller ones. In the bottom-left corner, there are a few small droplets. The text "OTHER POTENTIAL BENEFITS" is centered in the middle of the image.

OTHER POTENTIAL BENEFITS

RISK ASSESSMENT



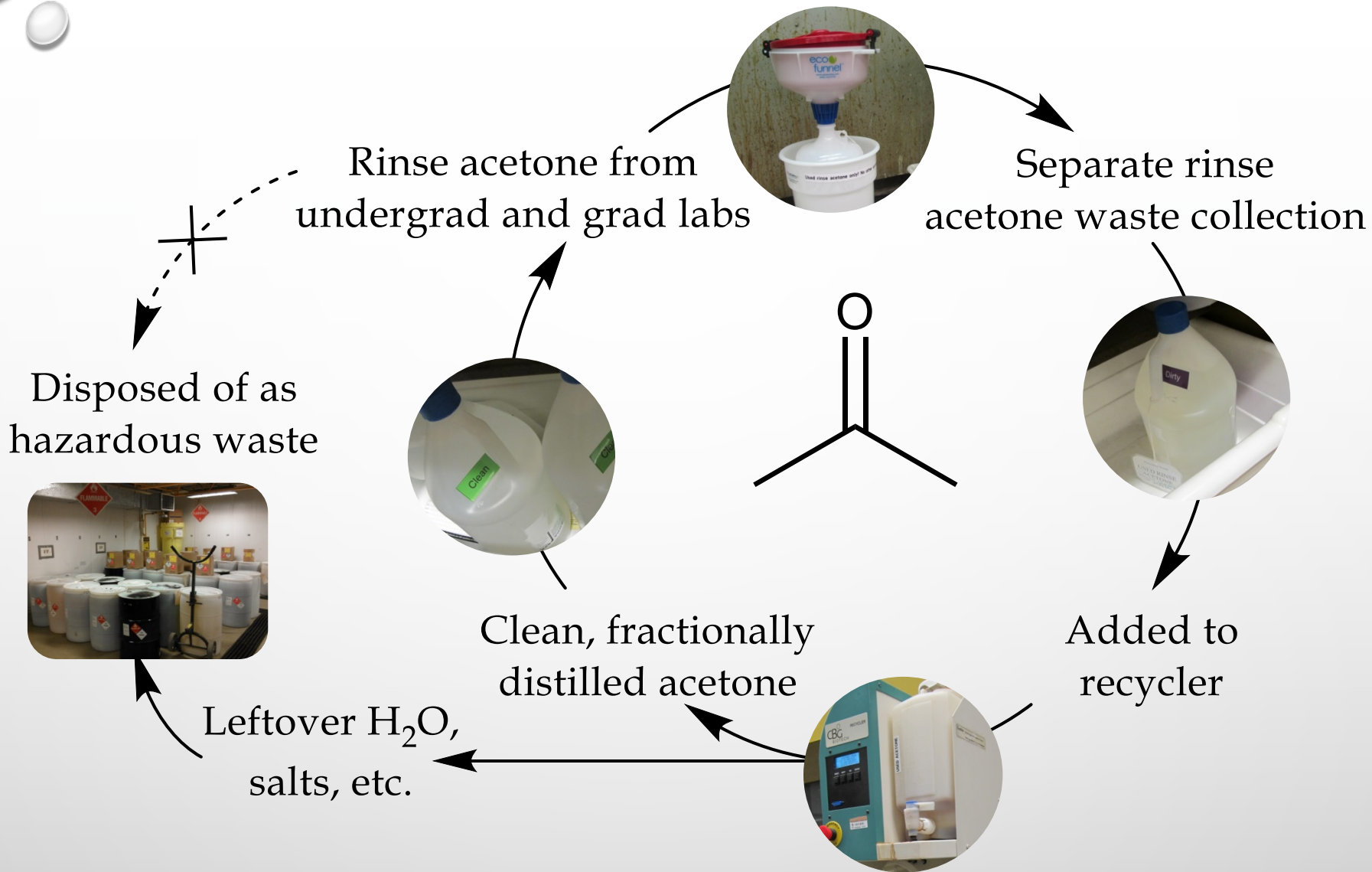
Consistent



Simple



Accurate



SOLVENT RECYCLING PROGRAM

CYLINDER DISPOSAL PROGRAM



Expensive to dispose



Hazard to keep

SUMMARY

- Implementation of the system: a team of temporary employees and students
- The challenges faced: physical issues, what to inventory, culture change, and chemical fallout
- Accomplishments: chemical redistribution
- The potential benefits: risk assessment, solvent recycling program, and cylinder Disposal Program



QUESTIONS?!



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CU Chemistry Department*

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