



freezer challenge.

Stephanie Ngugen

Smith Lab Lab

2022 Completed Scoresheet

22 December 2021

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Estimated kWh/day saved: 79.65*

*This is based on questions where the energy savings was automatically calculated. Some questions will be manually calculated and this value may change based on how you answered those questions.

Lab Information

Your Name: Stephanie Ngugen

PI Name or Lab Name: Smith Lab

Organization (University, Company, etc.): Ideal Lab Group

Department: Biochemistry

City/State/Province: Salt Lake City, UT

Country: United States

Email Address: programs@mygreenlab.org

Our organization is best characterized as: Biotech/Pharmaceutical Company

Our labgroup is best characterizes as: A laboratory with 11 - 25 lab members.

Good Management Practices

Identify the number of cold storage units in each category that you have done a full defrost on, meaning you have removed all samples, turned the unit off, allowed all ice to melt, and then turned the unit back on again.

UULT freezers (anything colder than -96°C): 0

ULT freezers (between -40°C and -96°C): 2

-30°C and/or -40°C freezers: 0

-20°C freezers: 1

Identify the number of cold storage units in each category from which you have removed dust/debris from the intake, filters, and coils.

UULT freezers (anything colder than -96°C): 1

ULT freezers (between -40°C and -96°C): 3

-30°C and/or -40°C freezers: 1

-20°C freezers: 5

4°C refrigerators: 2

Identify the number of cold storage units in each category where you have done either of the following: a). brushed the frost from inside the freezer door or cabinet/shelves; b). cleared the door gaskets and seals of frost or ice by gently tapping/brushing them (no scraping!). Only count each of your lab's cold storage units ONCE for this question, and only record data here if you actually needed to perform one of these best practices due to frost/ice buildup.

UULT freezers (anything colder than -96°C): 0

ULT freezers (between -40°C and -96°C): 0

-30°C and/or -40°C freezers: 0

-20°C freezers: 0

4°C refrigerators:

Identify the number of cold storage units for which you have created new sample inventories or updated existing inventories since August 2021.

UULT freezers (anything colder than -96°C): 0

ULT freezers (between -40°C and -96°C): 0

-30°C and/or -40°C freezers: 0

-20°C freezers: 0

4°C refrigerators:

Identify the number of refrigeration units from which you have cleaned out or removed samples/other items since August 2021.

UULT freezers (anything colder than -96°C): 0

ULT freezers (between -40°C and -96°C): 1

-30°C and/or -40°C freezers: 0

-20°C freezers: 1

4°C refrigerators: 1

Approximately how many samples have you discarded in total (since August 1, 2020), across all the cold storage units you cleaned out samples from? Provide your best estimate; select a single answer.

About a single shelf worth of space (approximately 150 standard freezer boxes that are 5 x 5 x 2 inches)

If you know the number of samples you discarded, please describe here. This question will not be scored...the previous question will. But if you have this information and wish to share it with us or your organization's site coordinator, please include it here.

400 samples discarded!

Estimate the number of full, standard freezer boxes that your lab has replaced with high density format freezer boxes.

1 - 10 full standard freezer boxes have been converted to high density format storage

Temperature Tuning

Identify the number of ULT freezers whose set points have been adjusted from -80°C to -70°C or warmer. Please indicate the number of freezers whose set points were adjusted to -70°C prior to the 2022 Freezer Challenge (before August 2021) and during this Freezer Challenge (after August 2021).

Number of ULT freezers set at -70°C or above prior to 1 August 2020: 1

Number of ULT freezers set at -70°C or above after 1 August 2020: 2

Identify the total quantity of samples or other items that you moved from a colder storage temperature to a warmer storage temperature, across all the cold storage units you did this for. Some examples of how you could do this are, a) moving samples out of a colder unit into a slightly warmer one such as -70 C to -20 C, or b) changing the set point of a cold storage unit to a warmer temperature such as warming a -40 C unit to -20 C. Do not count warming an ultra-low to -70 C for this question though, as this was captured in question 1 on this page.

Not Applicable

Retirements and Upgrades

RETIREMENT WITHOUT REPLACEMENT - Identify the number of cold storage units that you retired as a result of them being empty or no longer needed. (In other words, retirement without replacement. Your answer to this question SHOULD NOT be identical to the answers you give for the next question on energy efficient upgrades).

UULT freezers (anything colder than -96°C): 0

ULT freezers (between -40°C and -96°C): 0

-30°C and/or -40°C freezers: 0

-20°C freezers: 1

4°C refrigerators: 0

RETIREMENT WITH ENERGY EFFICIENT REPLACEMENT - Identify the number of cold storage units that you upgraded to a more energy-efficient model.

UULT freezers (anything colder than -96°C): 0

ULT freezers (between -40°C and -96°C): 2

-30°C and/or -40°C freezers: 0

-20°C freezers: 0

4°C refrigerators: 0

Sharing and Room Temperature Sample Storage

Identify the number of research groups that share cold storage space with your lab in each of the categories below.

UULT freezers (anything colder than -96°C): 0

ULT freezers (between -40°C and -96°C): 1

-30°C and/or -40°C freezers: 0

-20°C freezers: 2

4°C refrigerators: 0

Identify the number of refrigeration units that contain barcoded inventory.

UULT freezers (anything colder than -96°C): 0

ULT freezers (between -40°C and -96°C): 0

-30°C and/or -40°C freezers: 0

-20°C freezers: 0

4°C refrigerators: 0

Please indicate the number of times you have tried room temperature sample storage (RTSS) for well plates and/or sets of 25 tubes.

Well Plate: 1

Set of 25 Tubes: 0

Please indicate the number of reagents or kits THAT USED TO BE STORED AT 4 C OR COLDER that are now stored at room temperature.

Reagents: 0

Kits: 0

If you have adopted room temperature sample storage, please select the total number of well plates, sets of 25 tubes or vials, round bottom flasks, and/or 2" boxes that are currently being stored at room temperature that had previously been stored in refrigerators or freezers. Select a single answer.

1 - 10 items (well plates, sets of 25 tubes, flasks, or 2" tall boxes)

Part of sustainability is being willing to share what actions you are taking with others, such as friends, family, neighbors, or peers. This is called Social Diffusion, and highly effective in the realm of sustainability. Earn up to three points for this question for successfully motivating one, two, or three other lab groups to join the 2022 Freezer Challenge. These labs can be from your institution, but don't have to be. List the lab name, institution, and your lab contact in the text box below for up to three labs you've discussed the 2022 competition with. If they register before July 1, 2022, you will earn a point for each lab for this action.

Lab 1: Ideal Lab Group, Tiffany Lab, frank@noemail.org

Lab 2: N/A

Lab 3: N/A

Additional Information

Please describe any additional actions your lab has taken to improve sample management or reduce the environmental impact of cold storage. Do not restate other answers you provided in the scoresheet. Only include different actions that the scoresheet did not cover.

Nothing else I can think of!

Please indicate the number of refrigeration units in your lab for each category.

UULT freezers (anything colder than -96°C): 1, 1

ULT freezers (between -40°C and -96°C): 3

-30°C and/or -40°C freezers: 1

-20°C freezers: 5

4°C refrigerators: 2