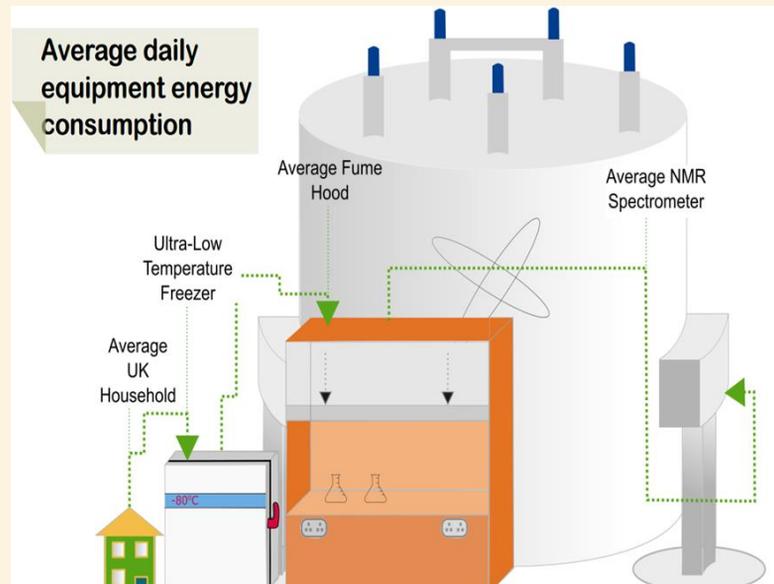


SUSTAINABILITY IN SCIENCE INDUCTION

UCL's researchers are providing solutions to some of the globe's biggest challenges, including the current climate emergency. Our aim is to make that research have an even bigger impact while reducing our societal and environmental impacts.

Laboratories are at the frontier of this effort. They are extremely energy intensive; using 2/3rds of all energy at UCL.



This means they are where you can make the biggest difference.

This guide provides a few simple steps and considerations to help be sustainable and safe in the laboratory. Join our LEAF programme to learn more!

www.ucl.ac.uk/greenucl/resources/labs/leaf-laboratory-efficiency-assessment-framework

COLD STORAGE



What can you do?

- Only store what's necessary, track samples of departing staff and students
- Defrost seals when necessary
- Allow heat to escape the back
- Consider running your freezer at -70C instead of -80C (this saves 30% of energy use).
- Make sure fridge/freezer filters are clean.

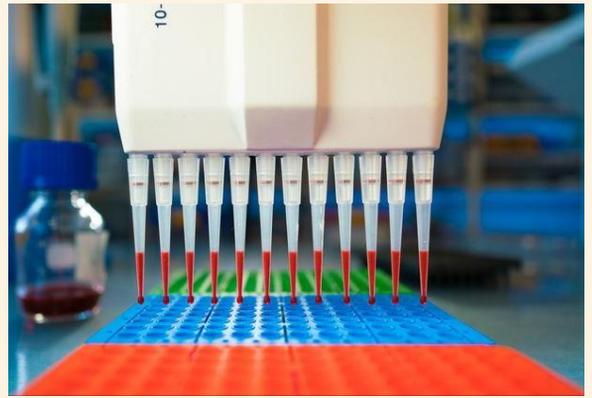
What are others doing?

www.youtube.com/watch?v=mD5WIdwRSCs

Find out more: www.ucl.ac.uk/greenucl

CORE FACILITIES

- UCL contains a vast array of world-class core facilities, including genomics, imaging, flow cytometry, proteomics, bioinformatics, etc.
- Using core facilities will increase throughput, lower costs, improve reproducibility/quality, and can allow experimental design support
- There's no single UCL site with all facilities currently, so search online for the facility you require with 'UCL' in the search.



TRAVEL



UCL encourages you to take the lowest carbon route to your destination even if it's not the cheapest. See our expenses policy for more detail:

www.ucl.ac.uk/finance/sites/finance/files/ucl-expenses-policy.pdf

- Key-Travel manages UCL travel bookings and reservations. Here you can find the most competitive prices.
- For more on how to book, pay, and key contacts for support: <https://www.ucl.ac.uk/procurement/node/315/rail-travel-uk>

WATER FOUNTAINS, MUGS

- We encourage the use of reusable mugs and bottles. You can purchase a reusable mug at any Student Union café, which will afford you discounts on all hot drinks.
- We also encourage you to use reusable water bottles. You can find a map of water fountains here: <https://www.ucl.ac.uk/greenucl/water>



Find out more: www.ucl.ac.uk/greenucl

WARP-IT

- An online platform which allows staff to freely trade items which otherwise may be disposed of
- If you require any new furniture, lab equipment/consumables, or have any usable items you would like to dispose of, consider using Warp-it
- You can register or login to Warp-It here:

www.warp-it.co.uk/company/ucl



LABORATORY WASTE

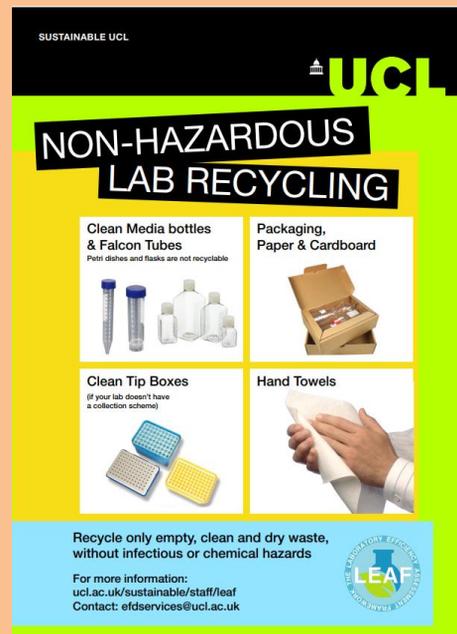
Clinical waste can cost 5-10 times more to dispose than recycling, and requires much more energy to process.

Want to learn more?

Segregate waste appropriately - packaging shouldn't be put in hazardous/clinical waste streams. Reduce and Reuse!

For guidance see:

https://www.ucl.ac.uk/sustainable/sites/sustainable/files/non_haz_poster_2021.pdf



REDUCE, REUSE

Remember that to reduce or reuse is always better than recycling

Find out more: www.ucl.ac.uk/greenucl



FUME CUPBOARDS

What can you do?

- Close your fume cupboard sash.
This can save thousands per year!
Turn down/off if allowed

What are others doing?

http://wcec.ucdavis.edu/wp-content/uploads/2014/06/Case-Study-SASH_Final.pdf



LEAF

Sign-up your lab to our LEAF programme.

- LEAF is a standard in sustainable science and contains Bronze, Silver, and Gold criteria covering a range of improvements
- LEAF has calculators to help you estimate your savings in ££ & tonnes of CO₂

Register or login here: <https://app.ucl.ac.uk/LEAF/>

Read more here:

<https://www.ucl.ac.uk/sustainable/staff/leaf>



BIO-SAFETY CABINETS

Safety cabinets (when ducted) can use as much energy as a fume cupboard.

What can you do? Power down when not in use!

What are others doing?

<http://science.sciencemag.org/content/352/6285/614>

EQUIPMENT

Power down equipment like benchtop-autoclaves and drying cabinets when they are not in use. Use digital timers, or post signage.

Share equipment wherever possible!

Before purchasing a new piece of equipment consider whether it exists already.



Check out our Sustainable Equipment Guide to learn more on sustainable equipment types:

https://www.ucl.ac.uk/sustainable/sites/sustainable/files/sustainable_lab_equipment_guide_-_metering_purchasing_operations.pdf

Try UCL's Kit-Catalogue to find the location of big equipment that you can use www.ucl.ac.uk/platforms/equip_db



CHEMICAL MANAGEMENT

Chemical management can cost up to £1 for every £1 spent on the chemical itself!

What can you do?

Check if a chemical is already available prior to purchasing – Use www.quartzzy.com

www.ucl.ac.uk/greenucl/spotlights/chemistry_chemical_cataloguing

Keep chemicals well labelled, and Reduce!

RE-USE / REDUCE CONSUMABLES

Re-use lab consumables wherever you can (media bottles and PBS bottles), and try to replace single use plastics with autoclavable alternatives.

Read this guide for ideas on reducing plastic use in labs:

https://www.ucl.ac.uk/sustainable/sites/sustainable/files/green_lab_consumables_guide_2021.pdf

Find out more: www.ucl.ac.uk/greenucl

SUSTAINABILITY IMPACT OF YOUR RESEARCH

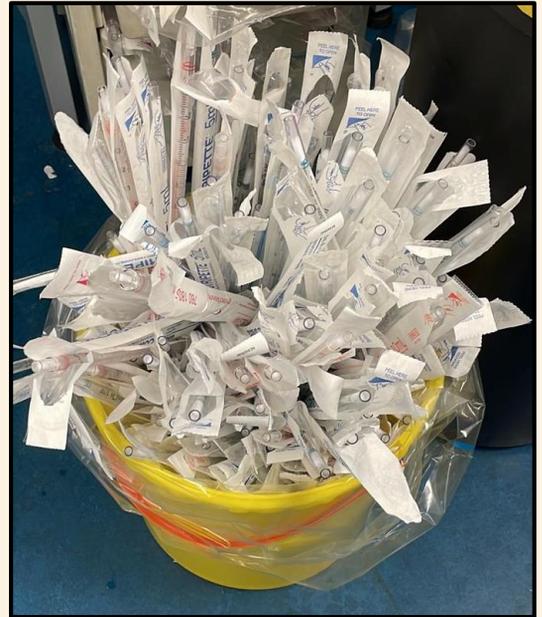
Calculate carbon footprint using LEAF calculators

Can you do the same experiment with fewer consumables?

Reduce the time you spend in lab by pooling experiments

Minimal experimental set ups with maximum data output.

Has anyone done the same experiment?
Check for existing data!



RAISE AWARENESS

Encourage others to implement sustainability practices

Join your local Green Groups, or start one!

Social media platforms e.g. Twitter @LEAFinLabs

Create interest for sustainability as a research topic

Work collectively to establish reproducible methods



WHAT ELSE CAN I DO?

Come talk to us! Or learn more about joining our sustainability awards programme – LEAF, which combines all of the above

- Turn the lights and computers off.
- Report any maintenance issues to UCL Estates: www.ucl.ac.uk/maintenance-service-requests/

Find out more: www.ucl.ac.uk/greenucl

