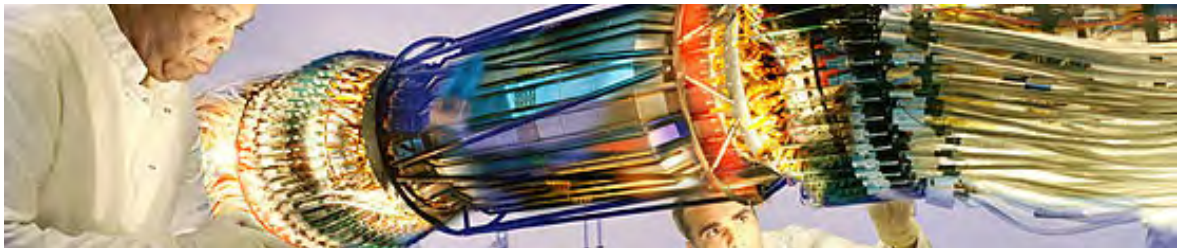
HOW TO...

SAVE ENERGY IN LABORATORIES



SUSTAINABILITY OPPORTUNITY

Stanford is home to more than 5,000 different research projects at any given time. Laboratory research often involves energy intensive procedures, and as a result, lab buildings typically have energy demands four to five times greater than their non-lab counterparts. In facilities with such high energy consumption, seemingly small measures can lead to large energy savings. Read on for some simple tips to improve your lab's energy efficiency and help Stanford conserve resources.

HERE'S HOW:

1) Modify Your Habits

- Refrigeration/Freezers
  - ☐ Only set temperatures as low as necessary for current lab work.
  - ☐ Dust coils behind refrigerators and clean the door seal to improve fridge efficiency.
  - ☐ Keep items in fridges well-labeled, and clear out materials from past research on a regular basis.
  - ☐ Try to consolidate into a single fridge/freezer, or share with neighboring labs to reduce the number of fridges and freezers required.
  - ☐ Try room temperature sample storage for DNA and RNA samples. Visit the room temperature sample storage rebate program webpage to learn more.
- Fume Hoods
  - ☐ Fume hoods draw air out of the room even when turned off, so adjust sashes to the minimum position when fume hoods are not in active use to reduce fan energy.
  - ☐ Clear obstacles away from fume hoods to make it easy to close the sash when not in use.
  - ☐ Operate hoods with the sashes at proper heights for safety.
- Lab Operations
  - ☐ Wait until you have a full load before running automatic glassware washers or autoclaves.
  - ☐ Keep the hallway door shut as much as possible to keep building air systems in balance.

2) Turn It Off!

- Unplug unused refrigerators or freezers.
- Turn off lab equipment when not in use, including centrifuges, water baths, microscopes, etc. Consider turning off any unused equipment if you will be out of the lab for more than an hour.
- Reduce lab lighting. Turn the lights off when you leave a room, and try to take advantage of natural daylight to do your work. Replace any incandescent light bulbs with more efficient options, many of which are available on SmartMart.
- Activate power management settings on computers and electronics. Use Stanford's Big Fix program to automatically put computers to sleep when not in use. Plug computers into smart power strips (available on SmartMart) to automatically turn off auxiliaries such as monitors and task lights.

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3) Reduce Lab Waste

- Used batteries and electronics can be recycled in battery and electronic recycling bins. Contact Environmental Health & Safety (EH&S) to learn where the nearest recycling bins are located.
- Don't forget to recycle standard materials like lab bottles, cardboard shipping boxes, and paper.
- Post excess assets on Stanford's REUSE web portal, which allows departments to transfer excess equipment between each other. Check the portal before buying any new lab materials.
- Post surplus chemicals on Stanford's Surplus Chemical Program website, run by Environmental Health & Safety (EH&S). Check the surplus chemical website before disposing of chemicals to see if they can be reused. Also check the website for available chemicals before purchasing more.
- If your lab still uses mercury thermometers, EH&S will replace them for free. Learn more here.
- Switch to less waste-intensive products and processes in your lab. EH&S provides a list of easy product and process substitutions, such as simplifying procedures to eliminate unnecessary chemical use.
- Consider adding flow restrictors and/or timers to lab sinks to minimize water consumption (especially hot water use).

4) Make Informed Purchases

- When replacing equipment, look for the Energy Star label, indicating an energy efficient model.
- Utilize the "cash for clunkers" freezer replacement rebate program. Through this program, you can earn rebates for retiring old freezers, replacing old freezers with energy efficient freezers, or moving samples to room-temperature sample storage. Applications must be received and new materials ordered before August 1 of the current fiscal year.
- Try to purchase fewer hazardous chemicals. Visit the Green Chemistry Wizard for suggestions on more environmentally-friendly chemical equivalents. Learn more about green chemistry from the EPA.

MORE INFORMATION

SCHOOL OF MEDICINE SUSTAINABIILITY PROGRAMS
http://medfacilities.stanford.edu/sustainability/

SUSTAINABLE STANFORD

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