GOOD MANAGEMENT PRACTICES

Defrost, clean out, take inventory

An unorganized freezer is not only an inefficient use of space, but it can waste scientists' time and impair research when samples cannot be easily located.

Simple maintenance practices like cleaning the freezer lint tray, vacuuming the coils and regular frost removal improves freezer life and performance.

Contact ESS for free freezer racks. Available in various sizes.

TIP: Many freezers have 10 percent to 30 percent unidentifiable containers or expired samples. Don't lose your samples to frost! Create an inventory.

Cutting Edge Practice: Store Smart will subsidize sample inventory software that enables scientists to barcode their samples and easily access the information.

Freezer Challenge: Win points per freezer for thorough clean-out and for electronic inventory!

To win awards, contestants must record actions on page 1 of the **Clean-out RTSS survey**, accessed at:

sustainability.ucdavis.edu/action/conserve_energy/store_smart.html

CUTTING EDGE TECHNIQUES

Room Temperature Sample Storage (RTSS)

Most DNA and RNA extracts are stored in freezers that can fail. RTSS uses organic or inorganic solutes as a chemical support lattice to stabilize genetic polymers.

Switching to RTSS secures your samples independent of mechanical failures, and saves energy. Sample costs are low thanks to campus subsidies during an introductory period.

RTSS subsidies cover materials (96-well microplates and dessicators), transfer labor and sample management software.

When to Use RTSS:

- **Starting new experiments or a new appointment**
  Ideal for graduate students and new faculty members
- **Retirement or long-term archival**
  Preserve a career's work with less risk
- **Shipping**
  No dry ice needed, no worries about summertime shipments
- **Equipment retirement and lab space**
  Retirement of old, inefficient freezers saves lab space, energy, greenhouse gas emissions and money

Freezer Challenge: Sample transfer subsidy up to 75% of materials and labor!

To win awards, contestants must record actions on page 2 of the **Clean-out RTSS survey**, accessed at:

sustainability.ucdavis.edu/action/conserve_energy/store_smart.html

SECURE YOUR SAMPLES AND SAVE ENERGY...

STORE SMART at UC DAVIS

Why Store Smart?

Mechanical freezing preserves millions of precious samples at UC Davis, yet freezers ***risk failure and need vigilant oversight.*** UC Davis has about 1,000 ultra low temperature freezers (ULT) and your participation will help reduce your risk and campus overhead. Optimal storage practices increase efficiency, save time and money, and enable scientific research. There are several ways you can join in and make a difference.

For more information, contact:
Store Smart Project Assistant, Samantha Ip, sjip@ucdavis.edu
Sustainability Manager, Allen Doyle apdoyle@ucdavis.edu

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HOW TO STORE SMART

Good Management Practices

- Defrosting, Cleanouts, Inventories, Consolidation

Temperature Tuning

- Chill up! Raise your ultra-low freezer by 10°C
- Store most DNA at -20°C

Retirements and Upgrades

- Retire a freezer or upgrade to a more efficient one

Cutting Edge Techniques

- Share your freezer with another group
- Use Room Temperature Sample Storage (RTSS)
- Barcode inventory

Learn more about Store Smart at:

sustainability.ucdavis.edu/action/conserve_energy/store_smart.html

Special Recognition Awards:

- Rip Van Winkle (oldest sample discarded)
- Pot O' Gold (most valuable item rediscovered)
- Gnarliest Freezer Photo

Freezer Challenge

This national contest highlights good sample management and saves energy, using the Store Smart practices listed above. **The 2011 contest runs May 3 through June 3**.

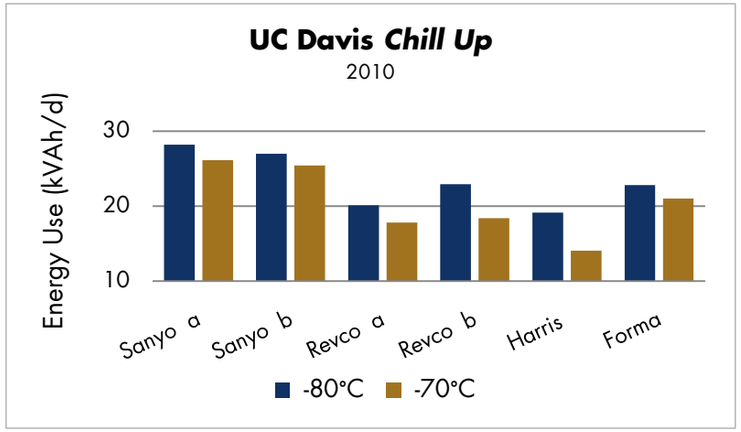
Researchers gain points and cash incentives by participating in Freezer Challenge. Visit the Store Smart page and please register to gain points. Email your questions to freezerweekucdavis@gmail.com.

Let's beat Harvard, University of Pennsylvania, University of California, Santa Barbara and University of Colorado at Boulder!

TEMPERATURE TUNING

Raise your ultra-low freezer temperature by 10°C

TIP: Raising the temperature of one ultra-low temperature freezer by 10 degrees saves, on average, the energy used by one standard (-20°C) freezer. For most bio-molecules and many microbial cultures, -70°C is adequate for months to a few years.



Follow the example of UC Davis and a nationwide group of researchers to "chill up" your freezers to -70°C. The campus energy budget gets a double pay-back through reduced air conditioning. Inquire about additional incentives for going warmer than -60°C. Temperature tuning also extends compressor lifetime.

Freezer Challenge: Win points per 10°C raised! (For -86° to -60°C freezers)

To win awards, contestants must record actions in the **Chill Up survey**, accessed at:

sustainability.ucdavis.edu/action/conserve_energy/store_smart.html

RETIREMENTS AND UPGRADES

Freezer amnesty, plus a rebate

Retirement: Take your ultra-low temperature freezer completely off the power grid! Retirement includes at least a one-year pledge not to replace the old freezer. Each retired ULT freezer is eligible for a rebate up to **$200.** There will be no cost for disposing of your freezer.

Upgrades: Units replaced by one using less energy must be validated with kW of Amp measurements, data from Labs 21 Wiki, Energy Star, or the manufacturer. Calculation assistance available.

Examples of possible rebates for ultra-low temperature freezers:

Action	Rebate
Retiring	At least $200 per freezer
Upgrading	$200 upon efficiency upgrade

Cutting Edge: Sharing: Sharing will be rewarded if it allows a PI to avoid buying a ULT. If sharing enables the retirement of a freezer, both labs receive points and cash equivalents.

Freezer Challenge: Win by gaining the most points at UC Davis

To win awards, contestants must record actions in the **Retirement-Upgrade survey**, accessed at:

sustainability.ucdavis.edu/action/conserve_energy/store_smart.html