

TULLMAN-ERCEK LAB 106 LEWIS HALL

Survey Date: August 6, 2012

Dept. of Chemical and Biomolecular Engineering

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The myPower Energy Survey team observed energy usage in 106, 109, and 111 Lewis Hall, as well as in the lab's kitchenette (103). Steph Davis, a graduate student in Danielle Tullman-Ercek's lab, conducted a tour of this space, answered questions about energy usage, allowed the myPower team to place "Turn it Off" stickers on appliances that could be switched off at night, and detailed the methods that her lab is already employing to save energy. There are six graduate students, several post-doc students, and numerous undergraduate students who work in this lab. Usual lab hours are 8am to 10pm on weekdays, and two people often come in on weekends. According to Ms. Davis, this lab "designs proteins and protein compartments to compartmentalize reactions." To her knowledge, the only surveys that have taken place in this lab are EH&S surveys of the fume hoods.

STICKERS

During the survey, the myPower team placed "Turn it off" stickers on seven appliances to remind lab occupants to turn off the equipment at the end of the day or when not in use. See the list of appliances below or look for this symbol in the following sections:



Go Ahead!

Turn off this equipment when you are finished using it.

- 2 Labnet Heating Blocks
- Thermoscientific Centrifuge
- Beckman Coulter Centrifuge
- 2 Biological Safety Cabinets
- Power supply for gel electrophoresis

The myPower team left additional stickers with Ms. Davis so that she can place them on more appliances after discussing it with the other members of her lab.

OBSERVATIONS

106 Lewis

Pre-existing Energy-Saving Techniques

- Lab occupants of 106 Lewis created a map of the space allocation in the fridge, which saves time and energy as lab members can find their samples more efficiently.
- Ms. Davis reported that the freezer is defrosted when it becomes covered in ice, and there is a sign to remind occupants to shut the freezer door when not in use.
- Occupants of this lab are very good at closing the fume hood of the Fisher Hamilton UV Ozone Reactor, which saves a lot of energy and is conducive to a safer lab environment.
- Overhead lights are turned off at the end of the day.
- Lights usually remain off in the Cold Room.

Appliances and Recommendations

Electrolux FRT15B3AW5 Frigidaire refrigerator

- If over 7-8 years old, consider replacing with an Energy Star fridge
- Remove items from atop the fridge to improve the efficiency of the appliance

-20°Celsius freezer

- Remember to defrost annually and clean coils

Small 90°Thelco Oven

- Consider turning off when glassware is dry, and switch off at night if not in use

Fisher Hamilton UV Ozone Reactor Fume Hood

- Consider shutting the sash of the fume hood for both safety and energy savings

Centrifuge 5415 C

- Remember to unplug this appliance when not in use

3 stir plates, pH meter, balance near Cold Room

- Consider plugging these appliances into a power strip that can be turned off when not in use



Labnet Heating Block

- Remember to turn off when not in use

Eppendorf Centrifuge 5424

- This appliance is in standby mode, but can be turned off when not in use

7 desktop computers

- These computers are always left on and go into sleep mode, but can be turned off at the end of the day
- Remember not to use screen savers, as this uses more energy than sleep mode or being turned off
- Increase contrast and reduce brightness to save energy

103 Lewis - Kitchenette

Pre-existing Energy-Saving Techniques

- Lights usually remain off when room is not in use.
- Occupants recycle paper materials.
 - Consider providing metal and glass recycling
 - For Styrofoam recycling, contact equipment manufacturers and send Styrofoam back to industry instead of throwing it away.

Appliances and Recommendations

Electrolux FRT18PSAW3 Frigidaire refrigerator

- If over 7-8 years old, consider replacing with an Energy Star fridge

Sharp Carousel microwave

- Consider unplugging microwave during breaks or vacations

Krups Pro Chef Xtra toaster oven

- Unplug this appliance when not in use

Computer & Energy Star PictBridge X7675 Scanner

- Remember to turn off computer and scanner at end of the day or when not in use instead of putting appliances on sleep mode because this saves more energy

HP Color Laser Jet CP3525dn Printer

- Remember to turn off printer when not in use
- Consider consolidating printer and scanner into one Energy Star appliance

109 Lewis

Pre-existing Energy-Saving Techniques

- Steph Davis reported, "Most of the appliances in the lab are acquired from other labs." This is a good method of recycling and reusing functional machinery.
- Lights usually remain off when not in use.
- PCR Workstation is always switched off when not in use.

- Waters 717 plus Autosampler is usually switched off.

Appliances and Recommendations



Thermo Scientific Centrifuge

- Consider turning this appliance off if it is not used frequently



Class II A/B3 Biological Safety Cabinet

- Turn off UV light at night
- This appliance, unlike the fume hood, can be turned off when not in use

Computers

- Remember to turn off, rather than put computers in sleep mode, to save energy
- Turn off second computer next to the Class II A/B3 Biological Safety Cabinet, as this is not used daily

Unused lab equipment

- Consider recycling these machines in the campus e-waste pick-up, if possible

111 Lewis

Pre-existing Energy-Saving Techniques

- Only half of the overhead lights are typically turned on during the day.
- Steril GARD Hood is usually turned off.
- Bio Rad Molecular Imager Chemi Doc XRS+ is turned off at night.

Appliances and Recommendations

Sorvall Biofuge Pico and shaker

- Remember to turn off when not in use



Heating block

- Remember to turn off when not in use



Beckman Coulter Avanti J-301 centrifuge

- Remember to turn off at night



Power supplies for electrophoresis

- Remember to turn off at night



Biosafety Cabinet

- Turn off UV light at night
- Turn off at night or when not in use

Computer

- Remember to shut down at night

1 large refrigerator and 1 mini Kenmore freezer

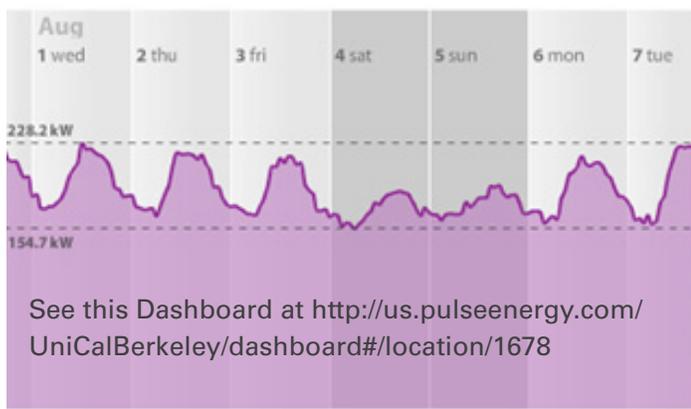
- Since only 2 people share the fridge, consider consolidating the fridge and the mini-freezer into 1 Energy Star appliance if possible

-80°C Harris freezer

- Consider creating a map of space allocation, as done for the fridge in 106 Lewis, to more efficiently find samples and save energy

2 large incubators at 37° and 30°

- Heat must stay on but shaker can be turned off at night



FOLLOW-UP FROM MYPower

- Consider telling surrounding labs about the benefits of the energy surveys
- Send the link to the dashboard for Lewis Hall so that occupants can see real-time energy usage. Watch the consumption decrease with energy-saving methods!



Steph Davis and the myPower Team

Further Resources:

- Contact myPower for more monitor and light switch stickers.
- Become a Power Agent! Go to: mypower.berkeley.edu/about/power_agents.html
- myPower Office tips available at: mypower.berkeley.edu/takeaction/office.html
- Recycle old computers, appliances, and lab equipment! For more information, go to the Berkeley Overstock and Surplus website: businessservices.berkeley.edu/overstock



Turn it off sticker