

Green Labs Committee
(Committee Meeting Minutes: 1/30/2014)
(1152 MBRB)

Committee Members:

Present:

Anderson, Rich	Chen, Wei-Lua	Kall, Stef	Sanzenbacher, Lisa
Bareither, Justin	Dobon-Barroneli, Malgorata	Lim, Hyejung	Schmidt, Rachel
Bian, Jing-Tan	Grismanauskas, Julie	Mannerings, Finn	Seida, Lowell
Carlson, Skyler	Hadathil, Sini	Ogedengbe, Abimbola	Skoleen-Modrzyk, Dorothy
Chabra, Samir	Hirchinson, Ben	Piersen, Colleen	Waszczak, Nik
Chava, Tanmay	Holman, Kaitlyn	Puppala, Anu	Wu, Qiang

Others Present:

Mark M. – Panasonic

Kevin F., John D. – DAI Scientific

Proceedings:

- *Meeting called to order* at 12:06 p.m. by Lisa Sanzenbacher
 - *Overview of green programs on campus* by Lisa Sanzenbacher
- Nitrile glove recycling has commenced at COMRB and MBRB buildings. Only Kimberly-Clark brand gloves will be accepted. Personnel wishing to participate should designate cardboard boxes in their labs and obtain labels from the Office of Sustainability. Contact respective building managers for emptying lab boxes into building collection bin.
- Bottles and containers (glass, paper, plastic) containing non-hazardous substances can be recycled in building recycling receptacles. Due to regulations UIC is not able to recycle containers that have held hazardous waste.
- Summary of EHSO's chemical redistribution program, chemicals available free at RRC. Hospital waste xylene recycling program generates xylene that is purer than was originally used.
- EHSO can be contacted in regards to deactivating/neutralizing acids, bases, formaldehyde and ethidium bromide.
- Used lab equipment and glassware can be obtained through the lab share program.
- Brief summary of the Green Labs Challenge and Green labs facebook page. Questions can be directed to (UICGREENLABS@LISTSERV.UIC.EDU)
- *Ultra-low temperature freezers* by Mark M.:
- Older ULT freezers consume 30-40kWh/day (typical 25 Cu. ft.), enough to power a typical American home. New units use 15-20kWh/day. ULT freezer size does not always dictate energy consumption, smaller 18 Cu.ft. units may consume more energy than some 25 Cu. ft. units.
- Proper maintenance of ULT freezers is critical for efficiency and reliability. Air filters and door seals should be inspected regularly and replaced if necessary. Samples should be organized so as to maximize space usage.
- Member Lisa Sanzenbacher noted that along with air filter maintenance, freezers should be cleared of frost regularly as this may allow for gaps in the door seals allowing cool air out and warm air in. The average ULT freezer left open for one minute requires ten minutes to reach its previous temperature. There has been no research showing that samples stored at -80C are better off than those stored at -70C. A change to -70C can lead

to not only a more energy efficient ULT freezer but one with a compressor that does less work which may extend service life. More information concerning ULT freezers can be found in the article "Everything You Wanted to Know about Running an Ultra Low Temperature (ULT) Freezer Efficiently but Were Afraid to Ask..." http://apps1.eere.energy.gov/buildings/publications/pdfs/alliances/ulf_freezer_user_guide.pdf

-When shopping for a replacement ULT freezer one should look for a history of reliability, noise output, energy consumption, and footprint.

-Panasonic ULT freezers utilize a compressor with an additional oil circulation loop for lower compressor operating temperatures allowing for longer service life.

-Panasonic VIP ULT freezers are currently produced with an updated, more energy efficient, heat exchanger reducing unit power consumption.

-Member Lisa Sanzenbacher asked if there is an energy star efficiency system in place for laboratories. Mike answered no, stating that such a program has been in development for 6-7 years but nothing has been implemented as of yet. Mike elaborates further by stating that the Department of Energy and Environmental Protection Agency are trying to create electrical energy consumption standards for labs.

-Mike pointed out that most ULT freezers, as a sample shown in a current BioExpress equipment catalog, are often outdated/older designs. States that obtaining energy consumption specifications and temperature mapping data for such units may often be impossible.

-Member Justin Bareither asks why Panasonic uses metal springs to isolate the compressor from the bottom quarter of a ULT freezer. Mike responds by saying that most manufacturers use rubber isolators instead of springs, which are cheaper to produce, but deteriorate faster allowing for more noise output later in life.

-For labs storing critical samples Panasonic's Twin Guard freezers feature a double compressor setup, where in the event of main compressor failure a backup compressor will hold temperature at -68C indefinitely.

-Panasonic ULT freezers can also be customized to utilize the campus chilled water supply allowing for compressor heat, normally sent to the surrounding room environment, to be carried away via chilled water supply significantly reducing heat input into surrounding rooms and building.

- Next meeting date, time and location: TBA

Meeting adjourned at 1:03p.m.

Submitted by Secretary Nicholas Waszczak