



Sustainable Laboratory Practices at Notre Dame

A program of the Office of Sustainability

Purpose: The greenNDiscovery program is designed to reduce Notre Dame's carbon footprint by promoting energy efficiency in research laboratories, the most energy intensive areas on campus.

Process: The greenNDiscovery assessment has 4 steps.

1. Informational meeting and walk-through
 - greenNDiscovery staff will ask lab representative basic information about lab operations, safety concerns, and ongoing experiments.
 - greenNDiscovery staff will collect information about the number and type of major appliances, computers, printers, and fume hoods.
 - *Time commitment for lab representative: ~30 minutes*
2. Approval of recommended metering and preventative maintenance
 - greenNDiscovery staff will present a list of appliances they would like to meter and preventative maintenance they would like to perform (vacuuming condensers and defrosting freezers).
 - Recommendations will also include preferred computer/printer settings and any mercury thermometers to be exchanged.
 - PI will sign off on approved recommendations; lab representative will arrange convenient times for them to be completed.
 - *Time commitment for PI & lab representative: ~30 minutes*
3. Metering and preventative maintenance
 - greenNDiscovery staff will meter approved appliances for 1-5 days
 - greenNDiscovery staff will vacuum condensers
 - Lab representative will move any lab equipment or chemicals that are blocking access to the condensers.
 - For high amperage appliances, an electrician from the Utilities Department will assist in metering.
 - Office of Sustainability will provide freezer space to store samples during defrosting.

- Lab representative will move any hazardous or sensitive items themselves; greeNDiscovery staff can assist in moving non-hazardous items with guidance from lab representative.
 - *Time commitment for lab representative: 1-3 hours, can be split up over multiple days*
4. Summary and recommendations for the future
- greeNDiscovery staff will present the results of their analysis and their recommendations for ongoing lab operations and maintenance at a lab meeting
 - *Time commitment for lab PI & staff: ~30 minutes*

Potential Energy Conservation: Preliminary estimates suggest that the energy conservation from conducting the greeNDiscovery assessment program in just 20 labs would result in hundreds of thousands of pounds of CO₂ avoided. Based on the results of the pilot phase of this program during Summer 2010, we will have more precise data to share about the impacts of this program.

Benefits for participating labs: Benefits include preventative maintenance which prolongs equipment life, rebate offers for replacement or retirement of inefficient equipment, free labor for cleaning and defrosting, and free spirit thermometers and mercury thermometer disposal if applicable.

Safety: Each greeNDiscovery assessment will be carried out by the Office of Sustainability professional staff and a graduate student intern. An electrical engineer from the Utilities Department will assist with metering as needed. All greeNDiscovery staff members have been trained in lab safety by Risk Management & Safety and have experience working in research laboratories. They will be dressed appropriately and have their own lab coats, safety glasses, and gloves.

How to participate: Each PI who wishes to participate will appoint a representative to be the primary point of contact with the greeNDiscovery team. The representative can be a lab manager, graduate student, researcher, or post-doc. To sign up or request more information, please contact Rachel Novick, Sustainability Education & Outreach Coordinator, at 631-1439 or rnovick@nd.edu.

Resources: The greeNDiscovery program was developed in consultation with Laboratories for the 21st Century (<http://www.labs21century.gov>) and the sustainable laboratory programs at UC Santa Barbara (<http://sustainability.ucsb.edu/LARS>) and Harvard University (<http://green.harvard.edu/fas/labs>).