GREEN LABS COORDINATOR

iSEE, F&S, ECBS SWATeam, and iCAP Working Group 2/26/18 meeting with SSC Education Working Group INSTITUTE FOR SUSTAINABILITY, ENERGY, AND ENVIRONMENT





Green Lab Concepts Reporting Structure Primary Deliverables





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Green Labs Program Benefits

- Engagement in campus Climate Leadership Commitments
- Recognition for sustainable behavior both at individual lab level and at larger campus scale
- More effective use of space and facilities
- Longer life span for lab equipment, especially with preventative maintenance for freezers
- Lower energy and water usage and associated costs
- Better comfort level for users with a safe and sustainable space
- Ability to share best practices across departments and colleges



Green Lab Concepts: Programs

Fume Hoods: 1,700 (and growing?)

- **Shut the Sash** campaign included in 2010 iCAP, to "educate users of variable air volume (VAV) chemical fume hoods (CFHs) on proper usage, to maximize efficiency and reduce energy demands."
- **Madigan Lab Pilot** in spring 2015 showed lab personnel often do not close the sash on fume hoods-allowing conditioned room air to escape through the hood. Lab users responded positively to a Shut the Sash program that reminded, reinforced and rewarded lab personnel to shut the sash on the fume hood.
- Freezers
 - **Temperature Settings** Per recent audits, many freezers are still set at -80 degrees C, instead of -70 degrees C
 - **Inventory tracking** lab personnel often do not know what is in the freezers or whose they are
 - **Freezer Challenge** with few incentives, 7 of the 1500 lab contacts signed up and 2 completed the forms
- Recycling in Labs
 - **Gloves** through Kimberly Clark program and iBuy
 - **Pipette Tips** funded by SSC
 - Styrecycle pilot program



ERML's closed hoods (blue line) increased from 28% to 93%.



Green Lab Concepts: Energy

Natural History Building

- Several new fume hoods with renovation
- New clean room with new ventilation requirements
- Chemical storage uses fume hood exhaust, requiring constant ventilation

• Ceramic Kiln House

- RCx worked with researchers to implement a local switch for the fume hoods, led to reduction in energy use
- Later a chemical storage fridge was added, requiring constant on for the electricity access, increasing energy use

National Soybean Research Center

- Growth chambers for plants use compressors to condition the air in the chambers, with once-through water cooling
- 260% increase in water consumption from FY08 iCAP baseline to FY17





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ECons004: iWG Assessment

"The iCAP Working Group strongly supports the creation of a formal and campus-wide Green Labs program, led by a full-time coordinator and assisted by a team of student interns and a faculty advisory committee."

Peer examples:

- UT Austin At U Texas Austin, the entire Green Labs program is carried out by a team of six students and one program coordinator
- U of Colorado has a vibrant program <u>http://www.colorado.edu/ecenter/greenlabs</u>
- Duke University has a fantastic program that pits labs against each other in a green competition. <u>https://sustainability.duke.edu/action/certifications/labs/index.php</u>
- The University of Michigan has a Sustainable Lab Recognition Program



Reporting Structure





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Primary Deliverables

Start with behavior change efforts: shut the sash, freezer challenge, glove recycling, recycled-content paper, etc.

- 1. A detailed inventory of research laboratory space on campus, beyond the campuslevel space use database. This inventory will focus on equipment and occupant behavior, as well as opportunities to enhance sustainability and related education.
- 2. A set of policy/procedure recommendations to guide our campus to be recognized for prioritizing Safe and Sustainable behavior throughout this tier one research university.
- 3. A financial report to campus administration describing resources saved through the program, with the intent that the results 1) improve campus sustainability as a whole and 2) can be demonstrated to clearly pay for themselves.

