



## Green Campus Portfolio Project Cover Sheet

### Energy Conservation in Labs/Fume hood campaign

<u>Component</u>	<u>Detail</u>
<b>Brief Project Description &amp; Objectives</b>	<p>Research laboratories are thought to consume somewhere between five to ten times more energy per square foot than typical commercial buildings, and laboratory fume hoods are typically the largest energy consumer. Some laboratory fume hoods left open can use as much energy as 3.5 houses over the course of a year, with a potential savings of up to 60%. Constant air volume (CAV) versus variable air volume (VAV) fume hoods are targeted in this project. CAV hoods exhaust air at a constant rate, and is dependent on sash height. The lower the sash, the higher the face velocity of exhaustion. VAV hoods maintain a constant face velocity regardless of sash position. The system continuously measures and adjusts the amount of air being exhausted to maintain the required average face velocity.</p> <p>Green Campus can play an effective role in educating &amp; influencing lab staff and users to implement sustainable practices within their daily routine during AND following completion of the campaign. UC Irvine piloted a fume hood awareness campaign in the spring, 2006, but due to insufficient energy data, were unable to ascertain the energy savings realized by their efforts. UC Berkeley will launch their "Shut the Sash" fume hood campaign this spring.</p>
<b>Key Campus/Partner Stakeholders</b>	<ul style="list-style-type: none"> <li>○ Campus Energy Manager</li> <li>○ Campus Environmental Health &amp; Safety Manager</li> <li>○ Building Manager</li> <li>○ Lab staff/assistants</li> </ul>
<b>Project Time Frame</b>	<p>Roll out for a pilot fume hood awareness campaign consists of 5 key steps: 1) Developing a proposal, 2) Target lab/baseline info 3) Awareness/personal contact/incentives 4) Assessment, and 5) Follow-up. It would be ideal for the project to launch at the beginning of the semester/quarter. Dependent when approval is granted, implementation &amp; assessment could occur over a 2 month time period, and follow-up may occur over the remainder of the semester/quarter.</p>



<b>Measuring Project Success</b>	<ul style="list-style-type: none"> <li>• Quantifiable metrics: energy saved; dollars saved; gHg emissions</li> <li>• Survey average height in inches, do before and after comparisons.</li> <li>• Continuous improvement, follow up if behaviors are consistent</li> </ul>
<b>Project Budgeting</b>	<ul style="list-style-type: none"> <li>• The fume hood awareness campaign can be fairly low cost educational program. Initial expenses include printing costs for educational/follow-up materials, and fume hood stickers (total \$150). To increase campus involvement, there is potential for fume hood competition between labs, with winners awarded incentive prizes (pizza party).</li> </ul>
<b>Project Tools &amp; Resources</b>	<ul style="list-style-type: none"> <li>• Fume hood background (in progress)</li> <li>• UC Berkeley “Shut the Sash” Fume hood proposal (in progress)</li> <li>• Fume hood audit spreadsheet for Tan (UC Berkeley in progress)</li> <li>• Reminder note – fume hood audit patrol (?)</li> <li>• Harvard Green Campus Initiative “Shut the Sash” Behavior Change Programs in Labs (ProjectSpaces)</li> <li>• Duke University Fume hood Study (ProjectSpaces) – appendices (sample sticker level where to close the sash)</li> <li>• “Shut the sash” fume hood sticker (UC Irvine – available on ProjectSpaces, and UC Berkeley in development)</li> <li>• Expanding lab assessment: Lab audit sheet</li> </ul>
<b>Green Campus Contacts/Resources</b>	<p><i>UC Berkeley Green Campus</i>  Vi Do  Vido1218@berkeley.edu  714-510-4151</p> <p><i>UC Irvine Green Campus</i>  Shyla Raghav  sraghav@uci.edu  949-933-9047</p> <p><i>UC Santa Barbara</i>  Allen Doyle</p>



<b>Potential Project Challenges</b>	<ul style="list-style-type: none"><li>○ Good energy data: What other energy efficiency projects may occur concurrently with your campaign?</li><li>○ Follow-up: Education outreach is only effective to a certain degree. It is essential to reinforce sustainable practices and follow-up with participants following your campaign.</li></ul>
<b>Miscellaneous</b>	(Nothing to include at this time)