



Berkeley  
UNIVERSITY OF CALIFORNIA

Green Labs



Berkeley bright green  
center for sustainable research Office of Sustainability & Energy





## **Chancellor's Advisory Committee on Sustainability (CACS) Green Labs Certification Program- Checklist**

**The UC Berkeley Green Laboratory Certification Program** recognizes laboratories that implement sustainability practices and continually aim to reduce their environmental footprint. Participating laboratories will collaborate within the campus labs community to bring innovation and creativity to the certification program, and will support the Chancellor's Advisory Committee on Sustainability's (CACS) efforts towards a more sustainable UC Berkeley.

CACS ([sustainability.berkeley.edu/cacs](http://sustainability.berkeley.edu/cacs)) has identified a list of sustainable actions that can be implemented by labs in order to satisfy the requirements for a Green Certified Laboratory. Certification is awarded through a points system. Certification stands for 2 years; criteria and requirements may change over time. Periodic check-ins between the lab and Green Labs Certification student representative will be required.

### ***Certification Process***

#### **Step 1: Appoint a Green Labs Liaison.**

Lab must appoint a Green Labs Liaison (GLL) who will serve as the representative for the lab and main contact with the Green Labs Certification student representative.

#### **Step 2: Complete the Green Labs Certification Checklist.**

The GLL will complete the Green Labs Certification Checklist with the assistance of the Green Labs Certification student representative. Completion of the Checklist will require proof of documentation for certain points (eg. visible to the student rep, photos, receipts, etc.).

#### **Step 3: Score the Checklist.**

Upon completion of the Checklist, the Green Labs Certification team will review the checklist and provide a preliminary score and recommendations for achieving additional points.

#### **Step 4: Implement Sustainable Lab Practices**

The GLL and Green Labs rep will review the recommendations. The lab will have the option to implement the recommendations.

#### **Step 5: Evaluation of Lab and Certification.**



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The GLL and Green Labs rep will conduct periodic check-ins for evaluation of the lab's new or continued sustainable lab practices. The Green Labs rep will provide a final evaluation to the Green Labs Certification team, who will determine the final certification.

### **Step 6 (optional): Green Labs Certification Program Feedback.**

The Green Labs rep and certified lab have the opportunity to provide feedback to the Green Labs Certification checklist and process.

### ***Benefits***

There are many benefits to participating in the Green Labs Certification Program:

- Labs can receive one year of support and consultation from the Green Labs Certification rep.
- Certified labs have the opportunity to provide certification program feedback, with the intent of improving the program for fellow UC Berkeley laboratories.
- Labs can add the certification to their profiles, recognition that can be beneficial when applying for research grants.
- Certified labs will be invited to join a campus laboratory working group, with the intent of sharing best practices regarding lab safety and sustainability.
- The Green Labs Certification stands for 2 years.

### ***Certification Rating System***

***Certified*** – Pre-requisites and a minimum of 20 out of 33 points

Laboratory P.I. : \_\_\_\_\_

Type of Laboratory: \_\_\_\_\_

Lab Location/Address: \_\_\_\_\_

GLL and Title: \_\_\_\_\_

Email : \_\_\_\_\_ Telephone: \_\_\_\_\_



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### ***Pre-requisites***

- ☐ Laboratory must have a Green Labs Liaison (GLL) who will meet periodically with other GLLs.
- ☐ The orientation for laboratory staff includes training on sustainable laboratory practices in addition to laboratory safety training.
- ☐ The lab has its own or has access to landfill, bottle & can, and mixed paper recycling bins with educational signage above all the bins. (Compost can be counted for points.)

### ***Energy Conservation and Efficiency***

1. Does the laboratory have shared freezers/refrigerators, allowing multiple users to store substances in centralized locations?
  - ☐ Yes (+1)
  - ☐ No
  - ☐ Plan To By \_\_\_\_\_
  - ☐ N/A

Documentation: Take a picture of the freezer/refrigerator and show multiple users.

2. Are the freezers/refrigerators Energy Star rated products or have they been purchased within the last 7 years?
  - ☐ Yes (+1)
  - ☐ No
  - ☐ Plan To By \_\_\_\_\_
  - ☐ N/A

Documentation: Take a picture of a freezer/refrigerator, with the brand and efficiency rating.

3. Are refrigerators and freezer coils periodically defrosted and cleaned? Does the laboratory eliminate old sample freezers?
  - ☐ Yes (+1)
  - ☐ No
  - ☐ Plan To By \_\_\_\_\_
  - ☐ N/A

Documentation: A picture of a defrosted/clean refrigerator.



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4. Are fume hood sashes or biological safety cabinets closed and turned to low position (manually or automatically) except when in use?

☐ Yes (+1)  
☐ No  
☐ Plan To By \_\_\_\_\_  
☐ N/A

Documentation: If you can control your fume hood sashes or biological safety cabinets, show the Green Labs rep the location of the control panel or the switch, and verify with a few other lab mates that they are indeed turned off when not in use. If you cannot control them (i.e. it is always turned on or controlled by the building manager), then inform the rep.

5. Are fume hoods used for storage?

☐ Yes  
☐ No (+1)  
☐ Plan To By \_\_\_\_\_  
☐ N/A

Documentation: Visual inspection confirming that ventilated storage cabinets separate from fume hoods are provided where appropriate, and actually used in practice.

6. Is equipment, including personal computers (unless those required to be on 24/7), heat plates, spinner plates, chilled centrifuges, ovens, and gas chromatographs, turned off when not in use? Is lab equipment set to energy-mode (when possible) and computer screensavers turned off?

☐ Yes (+2)  
☐ Not all, but some are turned off: \_\_\_\_\_ (+1)  
☐ Plan To By \_\_\_\_\_  
☐ N/A

Documentation: Take a picture of turned off computers and equipment. Lab can post a list of equipment that can be turned off or put "Turn Me Off" stickers on equipment.

7. Are lights turned off when the laboratory is not in use (even during the day)?

☐ Yes (+1)  
☐ No  
☐ Plan To By \_\_\_\_\_  
☐ N/A

Documentation: Interview and verify with a few lab staff if this is something they commonly do.



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8. The lab's light switches have stickers to remind lab users to turn off lights when lab is unoccupied. Stickers can be obtained from the Office of Sustainability and Energy, email [sustainability@berkeley.edu](mailto:sustainability@berkeley.edu).
- ☐ Yes (+1)
  - ☐ No
  - ☐ Plan To By \_\_\_\_\_
  - ☐ N/A

Documentation: Check for stickers on light switches.

9. Do lab staff and students know and understand their lab's total energy consumption? Is such information publicized throughout the lab?
- ☐ Yes (+1)
  - ☐ No
  - ☐ Plan To By \_\_\_\_\_
  - ☐ N/A

Documentation: Provide energy use data for buildings. Document publicity or postings.

### ***Water Conservation and Efficiency***

10. Are lab staff and students encouraged to reduce water consumption? Do the lab staff and students know the process to report any water leaks in pipes or sinks to building managers?
- ☐ Yes (+1)
  - ☐ No
  - ☐ Plan To By \_\_\_\_\_
  - ☐ N/A

Documentation: Interview a few lab staff awareness and document directions or postings.

11. Has the lab created and posted proper/efficient lab equipment washing techniques (such as a Steris Pipette washing rack, rather than a Nalgene fill and rinse system for glass pipettes)? <http://www.sustainability.ucsb.edu/labrats-best-practicesgreenwashing/>
- ☐ Yes (+1)
  - ☐ No
  - ☐ Plan To By \_\_\_\_\_
  - ☐ N/A

Documentation: Take a picture of equipment or techniques in practice.

12. Does the lab use vacuum pumps instead of water-intensive vacuum aspirators?
- ☐ Yes (+1)



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- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Take a picture of vacuum pumps.

### ***Chemicals and Storage***

13. Does the lab minimize chemical waste by routinely inventorying which chemicals are used, stored, and created in the lab? Does the lab purchase chemicals in amounts appropriate to need (in comparison to small batches)?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Interview lab staff and students and document the inventory list.

14. Are surplus chemicals donated to other departments or labs? Does the lab share and exchange chemicals with other labs?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Provide proof of requests and use of free chemicals.

15. Are chemicals stored in safe and secured EH&S approved locations, and does the lab keep a current inventory of chemicals stored? Are all chemical containers and stored materials correctly labeled?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Provide a copy of the inventory, inspect the locations and labels.

16. Does the lab identify its most hazardous chemicals and purchase and utilize alternative, less hazardous chemicals? (Use MIT's Green Wizard Tool:

<http://chs.mit.edu/greenchem/>)

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A



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Documentation: Provide proof of alternatives.

17. Do lab staff and students wash glassware with minimum solvent rinsing?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Interview lab staff and students, document technique in practice.

18. Does the lab use spirit or electronic thermometers instead of mercury thermometers?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Take a picture of spirit and/or electronic thermometers.

19. Does the lab avoid using halogenated reagents if possible?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Interview lab staff and students, document technique in practice.

### ***Purchasing***

20. Does the lab purchase and use 30%-100% recycled content paper?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Take a picture of purchased paper.

21. Has the lab purchased energy efficient equipment, such as the NRTL standards, Energy Star, etc., within the last two years? What equipment?

- ☐ Yes (+1)





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- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

List of equipment: \_\_\_\_\_

Documentation: Take a picture of labeled energy efficient equipment.

22. Do you work with or have you contacted central procurement to ask for alternatives to non-recyclable packaging? Are alternatives to products with non-recyclable packaging sought out or considered? *(An additional point can be awarded after a few weeks if the lab has made an effort to contact central procurement)*

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Lab can give at least one example of having purchased products with either 'example A', 'example B', or 'example C' packaging.

23. Are Green Seal Certified cleaning products or simple solvents used within the lab? For example, does the lab use water and ethanol instead of other commercial chemical products?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Take a picture of nontoxic/biodegradable and /or Green Seal Certified cleaning products.

24. Does the lab purchase pipette tips in reusable boxes?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Take a picture of the pipette tips in the reusable boxes.

### **Waste Reduction**



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25. Are envelopes, boxes and packaging material brought to their shipping/receiving location or mailroom to be reused, returned, or recycled to vendors whenever possible?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Take a picture of sorted packing material and proof of returning materials.

26. Does the lab have a shared office supplies area to limit buying extra quantities of new/repetitive items?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Take a picture of a shared supplies area.

27. Has the laboratory sent equipment to or purchased equipment from UC Berkeley Surplus over the last two years for salvage pick-up (i.e. furniture, anything metal, computers, and refrigerators)?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Provide proof of donations or purchases.

28. Do laboratory devices use rechargeable batteries where possible and/or offer battery recycling?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Take a picture of rechargeable batteries, charger, and/or recycling station.

29. Does the lab reuse disposable plastic and glass items?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A



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Documentation: Interview lab staff and students and take a picture of the practice of reusing materials.

### ***Education and Behavior Change***

30. Has the lab posted on a bulletin board a sustainable practices sign or one-page fact sheet?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Take a picture of the sign or one-pager.

31. Is sustainability or green practice a regular topic on team meeting agendas?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Provide proof of correspondence and steps taken to improve the green practices of the lab.

32. Does the lab assign responsibilities and tasks for key aspects of environmental performance, e.g. a 'green champion' within the lab or with responsibility for it, internal responsibilities such as monitoring recycling and sash closure?

- ☐ Yes (+1)
- ☐ No
- ☐ Plan To By \_\_\_\_\_
- ☐ N/A

Documentation: Provide proof of such structure/practice.



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### ***Sustainable Innovation***

Labs can earn up to 10 additional points for sustainable lab initiatives not listed above, subject to approval. For example, these initiatives can include those addressing individual behaviors or special programs held by the lab. Other examples include using green chemistry methods such as computer simulations and micro-scale chemistry techniques, providing composting stations in or near the lab, installing a bottle refill station and eliminating bottled water, or collecting and using one-side clean paper.

Please itemize, describe, and document below. (10 points maximum)

- |                          |       |           |
|--------------------------|-------|-----------|
| <input type="checkbox"/> | _____ | (1 point) |
| <input type="checkbox"/> | _____ | (1 point) |
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| <input type="checkbox"/> | _____ | (1 point) |
| <input type="checkbox"/> | _____ | (1 point) |

### ***GREEN LABS PLEDGE***

*"As the designated representative of \_\_\_\_\_, I pledge that:*

- We currently meet the requirements of the UCB Green Laboratories Certification,*
- We intend to maintain the programs and initiatives described in our application,*
  - We will seek to continually improve and expand our green programs, and*
- We will work to educate our faculty, staff, and/or students about our participation in the Green Labs Certification program."*

Signature: \_\_\_\_\_



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*Comments/Suggestions*